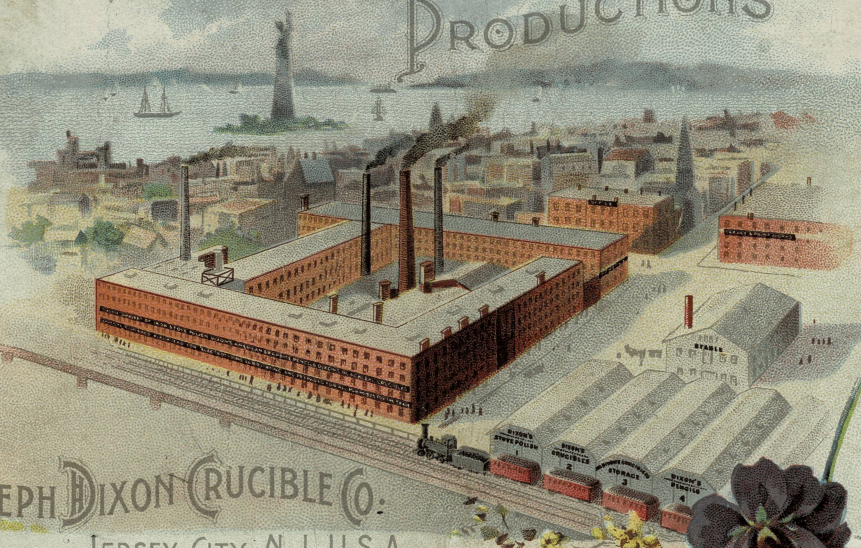
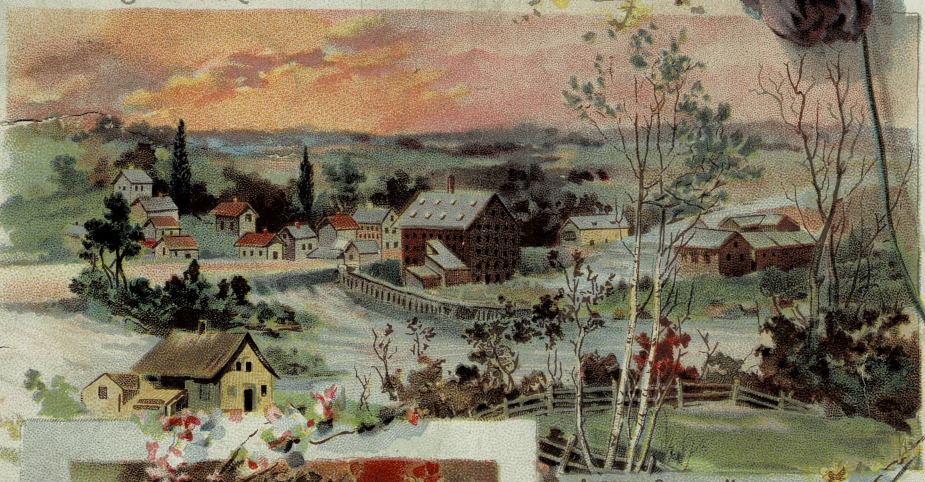
DIXON'S GRAPHITE PRODUCTIONS



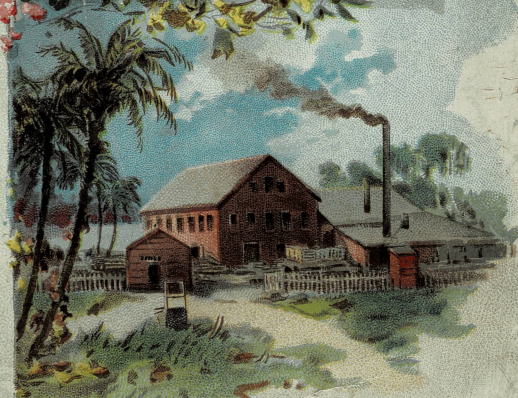
JOSEPH DIXON CRUCIBLE CO.

JERSEY CITY, N.J. U.S.A.



AMERICAN GRAPHITE MILLS, TICONDEROGA, N.Y.

AMERICAN GRAPHITE MILLS AT THE MINES.



CEDAR MILLS, CRYSTAL RIVER, FLORIDA.

THE KNAPP CO. LITH. N.Y.

Established 1827. Incorporated 1868.

DIXON'S

GRAPHITE

PRODUCTIONS

MANUFACTURED ONLY BY THE

JOSEPH DIXON CRUCIBLE CO.

JERSEY CITY, N. J., U. S. A.

WORKS AND GENERAL OFFICES, JERSEY CITY.

SALESROOMS AT

68 Reade Street, New-York; 38 North 4th Street, Philadelphia;
304 Market St., San Francisco.

RESIDENT REPRESENTATIVES:

Boston, St. Louis, London,
Chicago, Pittsburgh, Paris.

GRAPHITE MINES AND MILLS AT TICONDEROGA, N. Y.
CEDAR MILLS AT CRYSTAL RIVER, FLA.

OFFICERS:

E. F. C. YOUNG, *President.* JOHN A. WALKER, *Vice-Pres. and Treas.* GEORGE E. LONG, *Secretary.*

10–96.

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PREFACE.

A carefully written history of Graphite — its nature, its formations, its sources of supply, its uses in the past and at present, and its possible range of uses in the future — would be alike interesting to the scientific man and the layman. Such a history has never yet been written, although the Dixon Company has given publicity to much valuable, and about the only, information on the subject.

Joseph Dixon, the founder of the Dixon Company, was the originator of the graphite industry, and in 1827 began the manufacture of Dixon's plumbago or blacklead crucibles and Dixon's "Carburet of Iron" stove polish. His invention of the blacklead crucible revolutionized the crucible business, and all plumbago crucibles to-day, wherever made, are manufactured after his methods.

Graphite is sometimes called plumbago, oftener blacklead. The three names mean the same thing. Graphite varies largely in its constructure, and the value of graphite for its many mechanical purposes depends not alone on its purity, but quite as much upon a careful selection and preparation of the *proper kind* for the work intended.

Occasionally we hear of some one complaining of graphite or graphite preparations, and such a person will often write to some mechanical paper, condemning the use of graphite in places where, *if the graphite is of the proper kind and properly prepared,* it should be of the greatest benefit. Incompetent, if not unscrupulous, parties have attempted to meet the demand by putting on the market graphite or graphite preparations that are totally unfit for the uses specified. Again innocent dealers who are not familiar with the various forms of graphite have supplied customers with ordinary commercial plumbago, suitable chiefly for stove polish or foundry facings, when really a flake graphite for lubricating purposes was required. Graphite suitable for lead pencils is not the most suitable for lubricating, although it has lubricating qualities; again graphite suitable for stove polish would not answer for crucibles, although it might be equally pure and stand the heat quite as well.

Graphite is one of the forms of carbon. It is not affected by heat or cold or any known chemical. As it comes from the mine, however, it contains from 50 to 80 per cent. of silica, sulphur and other impurities,

and the process of completely freeing the graphite from impurities requires very expensive machinery and the most skilful manipulation. Only manufacturers having such facilities can hope to produce an absolutely pure article. The impurities in much of the graphite now in the market take on the appearance of graphite by contact, and such impurities are sometimes undetected even by the expert, unless chemical tests are employed. This is especially true of amorphous graphite, commonly called blacklead, which is graphite without any particular form and usually mixed with clay.

We have endeavored to describe as fully as space will permit in this catalogue our various productions and to give good reasons why they are superior to imitations, but we usually have special and more exhaustive circulars describing them, which we shall be very glad to send to any one interested, and we shall be equally glad to answer any inquiry.

We are miners as well as importers of graphite in all its forms, and use no graphite that we do not either mine or prepare. We have not only every facility in the way of machinery and chemists, but also the records and experience beginning in 1827, when Joseph Dixon first began the manufacture of stove polish and crucibles. We therefore know and guarantee the purity of our productions, and buyers of the Dixon products can feel assured not only of the *purity* of the graphite used, but also that the *proper* graphite has been used.

Correspondence is solicited.

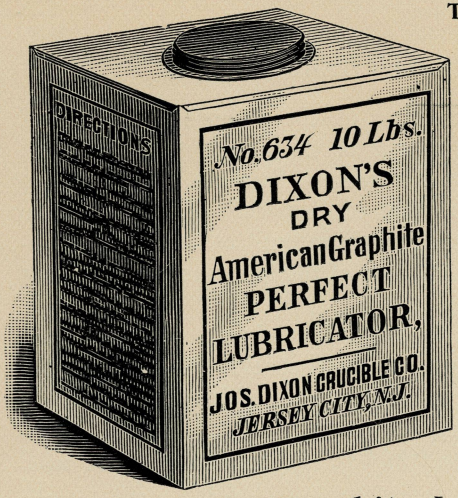
JOSEPH DIXON CRUCIBLE CO., Jersey City, N. J., U. S. A.

PRICES.

Where prices are inserted they are, except in one or two special cases, net, f. o. b., New-York. Where prices are omitted, the goods are sold through dealers only, or the goods are subject to current prices for quantity lots.

With every facility for obtaining raw materials at lowest prices, and with all the improved and latest appliances for manufacturing at lowest cost, we believe we can make most favorable quotations for graphite products of all kinds.

LUBRICATING GRAPHITE



TRADE NUMBERS AND SIZES OF PACKAGES.

Trade Nos.		
630—	¼ lb.	paper cans . . . . .10 cts. each.
631—	½ "	" " . . . . . .15 " "
632—	1 "	" " . . . . . .20 " "
633—	5 "	tin cans, screw top, .85 " "
634—	10 "	" " " " $1.60 " "
644—	25 "	boxes . . . . . .14 cts. per lb.
645—	50 "	" . . . . . .13 " " "
646—	100 "	kegs . . . . . .12 " " "
647—	350 "	bbls. . . . . .10 " " "

These are the trade numbers of our regular flake. If finely pulverized Graphite is required, it should be specified, in addition to the trade numbers, as No. 2.

Graphite Lubrication.

The development of high-speed and great power machinery of the day has made the question of successful lubrication more serious than ever before. The compound engines, the great motors, the heavy shaft lines and gears, now so common in the large power plants and mills, present many new questions of friction and lubrication.

With superheated steam and high pressure there is difficulty in properly lubricating steam cylinders and valves.

Under these conditions pure flake graphite has solved so very many of the problems that it would seem to be the key to solve many others. A prominent engineer once said, " The more solid the lubricant that can be used in any place, the better the lubrication."

For all engine cylinders graphite can be used dry or mixed with a little oil or water. All three ways have been tried with satisfactory results. For heavy bearings it may be mixed with oil or grease, and with oil for light bearings. The quantity to use depends upon the tightness of the bearings. It is better to use too little rather than too much, as graphite is a solid substance. The graphite coats the bearing surfaces with a shiny, unctuous veneer, which is unrivaled for smoothness, enabling the parts to run with almost no friction or heating.

On being applied to heated bearings, the graphite soon fills up any inequalities of the bearing surfaces due to cutting, abrasions, etc., making them smooth and even, after which the bearing soon cools down.

It is equally useful for wood or metal surfaces — in short, in all cases where friction exists. If the bearings are loose enough for the introduction of this thin flake graphite, it will prevent heated bearings, cool those already heated, and reduce friction better than anything else in existence.

In all cases where the service required of a lubricant is very severe, graphite will be found specially useful, as in mill-steps, gears, heavy bearings, turbine steps, etc.

What Science Has Demonstrated.

At the Sixth Annual or 32nd meeting of the American Society of Mechanical Engineers, held at the rooms of the Society in New York City, in December, 1895, Mr. Albert Kingsbury, Durham, N. H., read a paper on "Experiments on the Friction of Screws." The tests were made by the aid of a specially designed machine built at the New Hampshire College shops. It now forms a part of the laboratory equipment of the College.

The author did not consider that the tests showed that any one of the metals developed less friction than any of the others, but the tests are specially interesting because of the great lessening of friction by means of graphite, as will be shown by the following:

Lubricator.	Minimum.	Maximum.	Mean.
Lard Oil,	.09	.25	.11
Heavy Machinery Oil (Mineral),	.11	.19	.143
Heavy Machinery Oil and Graphite (Equal Volumes),	.03	.15	.07

Mr. Kingsbury was complimented by Professor R. H. Thurston, of Cornell College, for the work he had accomplished. Personally Professor Thurston has found that sperm oil was better than lard oil for reducing friction in such instances. He trusted that Mr. Kingsbury would continue his investigations.

Mr. Kingsbury felt gratified at the manner in which his paper had been discussed, and in reply to a question that had been asked, he said that the graphite that had been used was from the Joseph Dixon Crucible Company, Jersey City, N. J. He said he did not intend anything in the way of an advertisement. He also added that he had tried to purify the graphite, but there was no gain. In order to satisfactorily employ the graphite, the fit must be loose.

Some years ago, when Professor Thurston was connected with Stevens Institute, he made a series of experiments to determine with scientific accuracy the value of graphite as a lubricant. He found that under the same number of pounds pressure, and traveling at the same rate of speed, the bearings lubricated with Dixon's Graphite, mixed with enough water to distribute it over the bearings, did nearly three times more work than the best quality of winter sperm oil. He also found that when 15% by weight of graphite was added to the best quality of lubricating grease, he was able to run the bearings nearly six times longer, at the same high rate of speed, than when the bearings were lubricated with the same grease, without the addition of graphite. Furthermore where the graphite was used there was no cutting and the bearings were in perfect condition.

Summary of Prof. Thurston's Tests.

FIRST TEST.	Quantity in milligrams.	Pressure on bearing per square inch.	Number of revolutions per minute.	Time in minutes till the bearings "squealed."	Total No. of feet friction surface traveled.
Best Sperm Oil	335	48 lbs.	2000	11	7,198
Dixon's Perfected Graphite, mixed with enough water to distribute it over bearings	120	48 lbs.	2000	30	19,635

NOTE.—Under same number of pounds' pressure and traveling at same rate of speed the graphite did nearly three times more work than the best quality of winter sperm oil.

SECOND TEST.	Quantity in milligrams.	Pressure on bearing per square inch.	Number of revolutions per minute.	Time in minutes till the bearings "squealed."	Total No. of feet friction surface traveled.
Best Sperm Oil	335	60 lbs.	2000	51	33,360
Best quality of Lubricating Grease	335	60 lbs.	2000	51	33,360
Same Grease containing 15% **Dixon's Perfected Graphite**	335	60 lbs.	2000	293	194,941

NOTE.—The grease without the graphite gave no better results than the sperm oil; but when 15%, by weight, of DIXON'S Perfected Graphite was added the bearings were run nearly six times longer at the same high rate of speed. Furthermore, where the graphite was used there was no cutting and the bearings were in perfect condition.

Result of tests made by R. Bryce-Gemmel, Ph. D.

R. BRYCE-GEMMEL, PH. D., F. C. S.,
CONSULTING, ANALYTICAL AND TECHNICAL CHEMIST,
CHEMICAL ENGINEER.
ANALYTICAL LABORATORY AND ASSAY OFFICE, 288 Boylston Street.

Messrs. THE JOS. DIXON CRUCIBLE CO. BOSTON, April 10, 1893.
Jersey City, N. J.

Dear Sirs: Referring to yours of February 9th, in which you desired to know the results of my experiments with your graphite, and as I have now completed these experiments, I beg to say that out of thirty samples tested I invariably found that the results obtained with lubricating oils mixed with your graphite were the most commendable. I found the sample you sent me to be free from grit, and, as before stated, to possess unequaled qualities as a lubricant.

Yours respectfully,
R. BRYCE-GEMMEL, PH. D.

CATSKILL MOUNTAIN RAILWAY AND OTIS ELEVATING RAILWAY.
JNO. L. DRISCOLL, Master Mechanic.

JOS. DIXON CRUCIBLE CO.,
Jersey City, N. J. Catskill, N. Y.

Gentlemen:

We believe in the use of Dixon's flake graphite. We have tested it more fully on our Otis Elevating engines. Twice a day we give them a dose through independent oil cups, and since using it they have done the work easier, with less coal consumption and less cylinder oil. The engines are of the Corliss type, and the oil has a much shorter trip to the atmosphere than in the slide-valve engine, and any one using the Corliss engine will find economy in using Dixon's flake graphite.

We intend to give flake graphite a more extensive trial on our locomotives. We have used it with success in our tender boxes.

We have also had good success with Dixon's graphite grease. After trying a number of kinds of grease in the idler grease cups of the Otis Elevating Railway, we found Dixon's graphite grease the only grease that would stand the heat on the side of the Catskill Mountains during the hot portion of the summer. We use the same grease in our car boxes, and a hot box is a rare thing with us.

The Otis Elevating Railway is a plane 7,000 feet long lying toward the east, with idler wheels every 30 feet. The sun bears down on it during the summer months quite severe, and it is cared for by Dixon's graphite grease with very little trouble or expense. The vertical lift of the plane is 1,600 feet and a fraction.

Very truly yours,
JNO. L. DRISCOLL.

Special circulars and pamphlets with detailed information sent on request.
Correspondence solicited.

In a special pamphlet devoted to the subject of lubricating graphite, a copy of which will be sent to any one interested, we furnish much practical information from engineers and others regarding the method of using graphite and places where it is found specially useful.

Proper Kind of Graphite for Lubricating.

Graphite varies greatly in its construction. The only kind that will give entire satisfaction is the pure, soft, Ticonderoga flake.

The flake is the proper and only form of Graphite which insures perfect lubrication, and Ticonderoga Graphite is the only Graphite mined from which an absolutely uniform flake can be obtained.

The Uses of Coarse Graphite and Fine Graphite.

Dixon's Perfect Lubricating Graphite, such as we send out in our regular packages, represents the degree in fineness of grinding, or size of flake, that has proved every way satisfactory in the thousand and one uses it has been put to.

For the cylinders of blowing engines some parties use Dixon's Flake Graphite ground somewhat coarser than our regular product. A coarse flake might prove useful in other uses.

For the valves of the Westinghouse Automatic Air Brake and similar places a finely divided flake will prove more effective than our regular product.

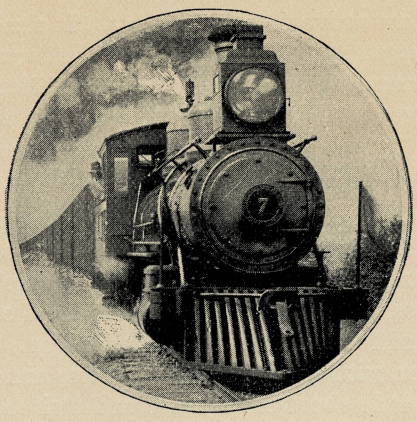
The Uses of Flake Graphite.

The usefulness of Flake Graphite is not limited to the cases cited in this pamphlet. No factory, machine shop, engine room, locomotive cab, or dynamo room is complete without a package of Dixon's Pure Flake Graphite.

Devices for Feeding Graphite in Engine Cylinders.

Special forms of lubricators are now offered for feeding graphite, but they are not usually considered necessary, although possibly are more convenient. Exceedingly satisfactory results have been obtained with the ordinary tallow cup, and with the regular sight feed oil lubricator. It has been found that it will feed through a very small opening without there being any danger of choking the pipe. The method of the Dixon Company is to use it in the regular sight feed oil lubricators. A teaspoonful is put in with the oil before starting in the morning and another at noon. The flakes of graphite are carried over one by one to the cylinders, where they form a coating of marvelous smoothness on all the bearing surfaces.

Special circulars and pamphlets with detailed information sent on request.
Correspondence solicited.
JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J., U. S. A.



Dixon's Pure Flake Graphite in Railway Practice.

If, in considering the advisability of equipping locomotive cabs with a supply of graphite, the painstaking tests of hundreds of thoughtful and careful engineers are allowed full weight, the question will be settled at once, and a can of Dixon's pure flake graphite will be deemed quite as necessary as a monkey wrench or an oil can.

The locomotive, mighty and powerful though it may be, is subject to many ills and mishaps. Often work goes out from the repair shop too hastily done, or done by incompetent men, and is only discovered when the engine is pressed to make time and pull its heavy load. It is then when rod brasses improperly reduced manifest themselves, and hot pins and journals cause delay and the greatest annoyance to engineers and officials. It is at such times that the engineer will find Dixon's pure flake graphite worth much more than its weight in gold if he takes pride in the record of his engine.

The general foreman on a leading railroad says: "We have been experimenting a little with Dixon's pure flake graphite, and truly it is a wonderful thing. At first we used a little of the finely pulverized through our relief valves on steam chests, and found this made the engine very much easier to handle, especially after using water brake down 3 per cent. grades for distances varying from 4 to 10 and 12 miles. We now mix it with valve oil and find it saves nearly 90 per cent. of oil. On our ten-wheel engines it is a great help. The valve motion works as smooth and easy as a stationary engine; no quivering and straining of transmitting blades owing to dry valves after using water brake, or engine foaming, as it does not wash off. It is the greatest anti-friction agent I have seen in my 32 years in the business. I have examined our valves and cylinders and find that it does not gum, but is cleanly in its action, putting a splendid face on the working parts. We have used it in our air pumps and find it extremely useful when a new pump goes into service, and also for its cooling properties in an old pump. It is a good thing when used carefully in the Westinghouse air-brake valve, as

it prevents the rotary valve from being cut. It also causes the piston valve to work easily and nicely and prevents the formation of gum and keeps the parts generally clean and in good condition. We have tried it on the triple valves with the same result."

The Use of Graphite Easily Breaks a Record.

During the month of September, 1895, an engineer on the Atchison, Topeka and Santa Fé Railroad used 15 pints of valve oil and burned 89 tons of coal in running 3,032 miles and doing 25 hours' switch work. He was as saving as possible in the use of valve oil and coal, and his engine made the best record for the month on that division. During the month of October, however, with the aid of less than two ounces of Dixon's pure flake graphite, he made about 5,300 miles and switched 12 hours, using only 17 pints of valve oil and 121¾ tons of coal, saving about 58% of oil and 30% of coal, not counting switch work. In his report he says: "I was just as saving as I could be in oil and coal both months, and the engine handled just as many cars as any engine of her class on this division. I was telling some of the men here what the engine had done in the month of October, and I was accused of stealing oil and buying oil, but I did neither. There is no use of recommending Dixon's pure flake graphite, as it will speak for itself."

For New Engines.

It is the practice of some roads to have a supply of Dixon's pure flake graphite at their engine houses for use on all new engines that go out. Sometimes an engineer familiar with the use of graphite is detailed to look after the working of all new engines, and graphite is invariably found to be the only remedy for stiff and hard working parts, hot pins, journals, etc.

If all railroad companies were to adopt this plan, or, better yet, supply all their engineers with Dixon's pure flake graphite, engines would not need to be sent so often to the shop to have rod brasses reduced, and reports from engineers for being late on account of hot pins and boxes would be far less frequent.

Some time ago a new engine came out of the shop, and the first day she ran so hot that she was laid up. An engineer who had demonstrated to his own satisfaction the great value of Dixon's pure flake graphite, asked the master mechanic if he could take that engine out and try her. He was told that she would probably run just as hot in his hands as she did when the other engineer had her. The engineer replied that she certainly would not run cold lying in the shop, and this reply decided the matter and the engineer was told to take her. Before starting the engineer worked a quantity of graphite in on her pins and boxes, and then took her out on the express and brought her back not even warm, but cool. When the engineer reported back the master mechanic was astonished and told the engineer that he might have her regular, and the engineer

wrote the Dixon Company, and after stating the details of the above, said: "I am running her regular now and can thank Dixon's graphite for getting a new engine, and would say to all my brother engineers that they should use Dixon's pure flake graphite for all bearings, and for valves and cylinders, and for steam chests when they get to leaking. An engineer has got to use graphite to know for himself how much easier his engine will do her work, and how much longer she will run without having her rods taken down."

What Dixon's Pure Graphite will Save.

So voluminous has been the testimony in favor of Dixon's pure flake graphite, without one single criticism, that there would scarcely be an end to the pages we might fill. An engineer on a Southern road writes:

"Dixon's pure flake graphite will save any engineer from worrying about hot bearings; but this is not the main saving; it will save oil, it will save material, it will make machinery run longer, and it will save the machinists from taking down 50% of the main-rod brasses that run hot on any road. It will save an engineer from worry, because it will make hot bearings run cool. It saves oil because of the smooth polished surface it leaves where it is used, reducing friction and lubricating perfectly. Any man who has run a locomotive knows how a hot pin will throw oil, and how often he has to fill the rod-cups. A cool pin will not use over 20% of the oil a hot one will.

"These are only a few of the ways to which graphite can be made useful on a railroad, and I hope that if any engineer has anything hot on his engine, he will try Dixon's graphite, and once tried, it will always be used."

A special pamphlet, entitled "The Boys," will be sent to any engineer or railroad official. It contains many testimonials, and shows the manner of using graphite on engines.

DIXON'S OILED GRAPHITE. No. 7847.

The graphite used is Dixon's pure Ticonderoga flake graphite, which is carefully and thoroughly ground in the best of lubricating oil. Each flake of graphite is thereby coated with a film of oil; and graphite prepared in this manner is specially recommended by engineers for cylinders and valves where superheated steam and high pressure are used, as there is usually some difficulty in lubricating steam cylinders and valves under such conditions. It mixes readily with cylinder oil. This graphite is also recommended for steam cylinders where it is desired to introduce little, if any, oil.

5 lb. package	**$1.00 each.**
10 " "	**1.75 "**
25 " "	**16 cts. per lb.**
50 " "	**15 " " "**
100 " "	**14 " " "**
Barrel Quantities	**12 " " "**

DIXON'S GRAPHITE PRODUCTS FOR ELECTRICIANS.

Graphite in Electrical Industries. Graphite, which is one of the forms of carbon, and more generally known as plumbago or black lead, has come to be an important factor in electrical industries. It is a graphite crucible which is used for electrical smelting, and it is a graphite pencil or rod which is used as an electrode in the process of electrical smelting. It is graphite pulverized to an impalpable powder that is used in electrolytic work by the copper smelters. Pure flake graphite is also used for lubricating cylinders and bearings of engines and dynamos, and the same material also forms the pigment for protective paints for trolley poles, electric-light poles, and roofs of dynamo plants and trolley-car sheds. Graphite would therefore seem to be a very important factor in electrical industries. During the last year or two the demand has very greatly increased for graphite resistance rods. Unlike German silver, it is not necessary to take into account the factor of quantity. For instance, a six-inch rod one-fourth inch in diameter may be made to have one ohm resistance or 10 ohms, or 1,000 ohms, or in fact almost any resistance that the electrician may require. Joseph Dixon was the originator of the graphite industry, and the Dixon Company are now the most extensive miners, manufacturers, and importers of graphite in the world. We are paying particular attention to the requirements of electrical engineers and are supplying the electrical industries with large quantities of material.

Graphite Boxes and Appliances We usually have in stock graphite boxes of standard sizes for baking carbons, lamp filaments, etc., and are prepared to make any size on order. These boxes will stand a heat of 4,000 degrees, and are superior to wrought iron or any other material for economy and durability. We also make graphite "forms" in wedges and other shapes for winding lamp filaments on.

Ground Graphite. Graphite, being a carbon, is found invaluable in the process of baking "carbons" and lamp filaments. It effectually prevents the exhaustion of the life of the "carbons" and filaments when in the fire, by giving up its own carbon to the oxygen, which would otherwise attack the "carbons" and filaments. We furnish such graphite in any quantity and ground to any degree of fineness.

Graphite Resistance Rods and Devices. We manufacture on order graphite resistance rods up to two inches in diameter and twelve inches in length, with resistance of 1 ohm or 1,000,000 ohms. The dimensions bear no particular relation to the resistance. This makes the use of graphite valuable where space is contracted and high resistance required. Where much current is to be carried sufficient radiating surface must be provided for to prevent undue heating. Other forms, as well as rods, are made on request.

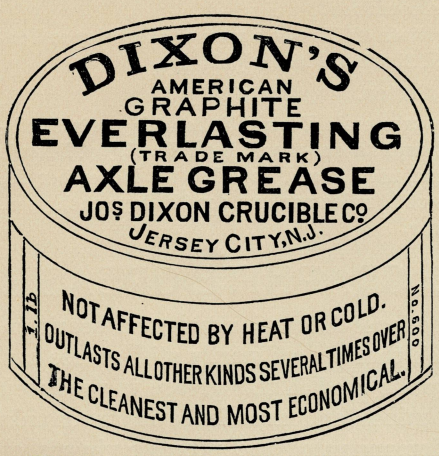
Graphite is not affected by acids, alkalies, or any known solvent and possesses very high conductivity, making it valuable for battery plates, etc.

Prices furnished on application. Special circulars and pamphlets with detailed information sent on request. Correspondence solicited.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J., U. S. A.

DIXON'S
Graphited Lubricants.

DIXON'S EVERLASTING GRAPHITE AXLE GREASE



Trade No.			
600—	1 lb. box	. .	$0.15 each.
601—	2 " "	. .	0.25 "
630—	10 " pail	. .	1.20 "
624—	25 " kegs	.	2.75 "
625—	50 " "	. .	5.00 "
626—	100 " "	. .	9.00 "
627—	bbls. ab't 350 lbs.		08½ per lb.

The basis of Dixon's Axle Grease is the pure, soft, flake graphite described in preceding pages.

The grease which holds the graphite is itself an excellent lubricant, but our object has been to utilize the wonderful and enduring qualities of the graphite, and we have used the grease simply as a means of holding the graphite, and of distributing it along the bearing surfaces of the axle and box. It is far cheaper in the end, for the reason that it will outlast any other axle grease many times over. It is not affected by time or climate, heat or cold. Whenever it seems to have become stiff and dry, it can be worked into a soft paste by means of a knife in a few seconds.

It never gums, does not become hard in cold weather, or run in hot weather. Outlasts any other grease many times over, and for safety and durability stands alone. Requires only enough to coat the axle, and makes frequent greasing unnecessary.

It forms on all bearing surfaces — especially on iron, steel, and wood — an incomparable slippery glaze, which reduces friction, strain, and abrasion to a minimum.

It is the only grease that livery-men can use with safety on roller or ball-bearing axles, as it is the only grease that does not rust the bearings. It keeps such bearings bright as nickel.

Axles and all bearings should be thoroughly cleaned of all gum and dirt before the graphite grease is applied. Apply it the first week sparingly, and there will gradually be formed on the axles a silver-bright surface, smoother than any metal can be made.

Special circulars and pamphlets with detailed information sent on request. Correspondence solicited.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J., U. S. A.

The Easier the Axle the Stronger the Horse.

SAMPLE TESTIMONIALS.

44,660 Miles.

Mr. Joseph R. Hice ran his Peddling Wagon through the State of Ohio for seven years, on an average of 3 pounds of Dixon's Everlasting Graphite Grease per year. His average has been 290 running days each year, and 22 miles each day, making a total of 44,660 miles.

When he had a new wagon made, the maker advised him to use the old axles again, the spindles were so true, and in such fine condition.

Mr. Hice is well known throughout the State of Ohio as a man of character and integrity. His Post-Office address is 2128 N. 21st St., Philadelphia, Pa.

9012 Miles.

Mr. W. H. Carpenter has been running a wholesale Yankee Notion Wagon in Southern Michigan the past eleven years. He bought a one-pound box (No. 600) of Dixon's Everlasting Axle Grease, May 19, 1888, and used it and no other till November 26, 1890 — 2 years and 191 days — an average of 12 miles per day, for 280 days each year, or 9012 miles with one pound of Axle Grease.

DIXON'S STANDARD GRAPHITE GREASE.

This is recommended for gears, for loose-fitting journals and bearings, or wherever the conditions are such that an ordinarily stiff grease can be introduced. The pure flake graphite used in this grease is produced only at the celebrated Ticonderoga mines, and experience in thousands of shops and factories has fully demonstrated the peculiar virtues of Ticonderoga graphite for lubricating purposes, as no other grease, even when the best of oils and fats have been used, has given quite the same satisfaction.

This grease is not intended for use in an oil cup, but will feed nicely through a tallow cup.

10 pound package	. . . .	**$1.50.**
25	**"**	**"**	. . . . **3.50.**
50	**"**	**"**	. . . . **6.50.**
100	**"**	**"**	. . . . **12.00.**

Barrels of 400 lbs., 10 cents per lb.

DIXON'S WATER-PROOF GRAPHITE GREASE.

For gears exposed to the action of water, for chains, cables, and wire ropes used in mines, quarries, etc., which are exposed to water, and for all other uses calling for a lubricant not affected by even running water, we strongly recommend Dixon's Water-proof Grease. The finest flake graphite is used, with a peculiarly strong and adhesive grease.

The superintendent of a mine writes us as follows, which will serve as a sample testimonial:

"We have been using Dixon's Water-proof Graphite Grease for the past two years and more. We have used it in competition with many other well-recommended compounds, but have found it superior to all others."

For railroad switches, interlockings, etc., it is without an equal.

Put up in packages of 10, 25, 50 and 100 lbs., and in barrels of 400 to 500 lbs. For prices see page 14.

Lubricating Pulley Blocks.

The following is a record of service tests of hoisting tackle recently made by Robert Grimshaw, M. E., at the Brooklyn Navy Yard, in collaboration with Lieut. John A. Bell, of the Equipment Bureau, U. S. Navy.

The tests were for the purpose of determining the percentage of power wasted by unlubricated blocks. For this purpose we procured a four-fold tackle which had been lying by a long time, the bearing surfaces being dry and dirty; tested this by slowly hoisting various dead-weights by man power applied through a 16-fold tackle, and measured by a spring balance.

We next had all bearing surfaces cleaned, but not lubricated, and made the same tests — and then lubricated them and again repeated the tests.

The results are shown in the accompanying tables.

In Table I no account is taken of the constant weight of the lower block and hook, nor of the varying weight of the rope between the blocks.

In Table II the weight of block and hook (41 pounds) is considered, merely to check the accuracy of the last column in Table I — the percentage of hauling power which is saved by lubrication, or wasted by non-lubrication.

Table I. Not including Weight of Block and Hook.

Net Weights Hoisted.	Theoretically Required to Raise Net Weights.	Act'l Weights Required.			Extra Power Required to Hoist Net Weights.					Lubricated with Waterproof Graphite Grease.	Saving by Lubrication.
		Unlubricated and Dirty Bearings.	Clean and Dry Bearings.	Lubr'ed with Waterproof Graphite Grease.	Unlubricated and Dirty.	Clean and Dry Bearings.	Lubr'ed with Waterproof Graphite Grease.	Unlubricated and Dirty.	Clean and Dry Bearings.		
Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Per cent.	Per cent.	Per cent.	Per ct.
600	150	243	213	195	93	63	45	62.0	42.0	30.0	32.0
800	200	323	278	255	123	78	55	61.5	39.0	27.5	34.0
1000	250	403	348	315	153	98	65	61.2	39.2	26.0	35.2
1200	300	483	413	378	183	113	78	61.0	37.7	26.0	35.0

Table II. Including Weight of Block and Hook.—41 lbs.

Gross Weights Hoisted.	Theoretically Required to Raise Gross Weights.	Actual Weights Required.			Extra Power Required to Raise Gross Weights.					Lubricated with Waterproof Graphite Grease.	Saving by Lubrication.
		Unlubricated and Dirty Bearings.	Clean and Dry Bearings.	Lubr'ed with Waterproof Graphite Grease.	Unlubricated and Dirty.	Clean and Dry Bearings.	Lubr'ed with Waterproof Graphite Grease.	Unlubricated and Dirty.	Clean and Dry Bearings.		
Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Per Ct.	Per Ct.	Per Ct.	Per Ct.
600	160.25	243	213	195	82.75	52.75	34.75	51.7	32.9	21.7	30.0
800	210.25	323	278	255	112.75	67.75	44.75	53.1	32.9	21.2	31.9
1000	260.25	403	348	315	142.75	87.75	54.75	54.8	33.7	21.8	33.0
1200	310.25	483	413	378	172.75	102.75	67.75	55.7	33.1	21.8	33.9

NOTE: These results show that the use of Dixon's Waterproof Grease reduced the Friction, in comparison with the case of Dirty Bearings, about 60 per cent., and when compared with Clean Dry Bearings, about 33 per cent.

As is usual with "cat and fish" tackle in the United States Navy, the upper block had roller bushings for the sheaves, and the lower one plain brass fixtures. The saving by lubrication would have been greater had both blocks had plain bushings.

The percentage of saving increased with the load, which is important in view of the fact that the loads were very light for the tackle. As it is, sufficient power-saving is effected to represent the work of one man in three: that is, to enable two men using clean and lubricated blocks to do as much hoisting as three with the rough and dirty blocks.

The lubricant used was Dixon's Waterproof Graphite Grease, as that is best adapted for anchor-handling tackle, which is exposed to both rain and sea water.

Graphite being unaffected by sea water or extremes of temperature, and the best lubricant for bearings getting heavy loads and rough usage, is admirably adapted for all machinery and tackle aboard ship, in frigid, temperate or torrid zones.

R. GRIMSHAW.

DIXON'S
GRAPHITE ROPE, CABLE AND CHAIN GREASE.

Rust is the great destructive agent of all wire ropes and cables and iron chains, and no material has a greater affinity for iron or steel than graphite, or so thoroughly protects it from oxidization. Dixon's Graphite Grease penetrates in and around the strands of wire ropes and cables, and not only prevents the dampness from taking hold, but so thoroughly lubricates the strands that they do not wear one against the other. The graphite grease also protects the outer strands of ropes and cables from abrasion when brought in contact with hard substances.

Special circulars and pamphlets with detailed information sent on request.
Correspondence solicited.
JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J., U. S. A.

First-class wire ropes and cables are expensive, and Dixon's Graphite Grease will be found a great preservative. It is waterproof and will resist the action of even running water. As it is sometimes interesting to know the experience of others, we append some sample testimonials.

CATAWBA MINE, King's Mountain, N. C.

"We have been using Dixon's Waterproof Graphite Grease for the past two years and more in greasing our wire ropes. We have used it in competition with many other well-recommended compounds, but have found it superior to all others in preserving our ropes from decay, and keeping them flexible and free from rust."

ST. LAWRENCE MARBLE CO., Gouverneur, N. Y.

"We use your Waterproof Graphite Grease on our wire cable to our derricks. It keeps the cable from wearing, and prevents its rusting, and we think it the best thing made for that purpose."

R. W. THACHER, Schenectady, N. Y.

"Used the Waterproof Graphite Grease principally on a chain used for pulling cars running out of doors on a broad runway, exposed to coal-dust, ashes, etc., and I am satisfied that it made a great difference in the power used to run the chain as well as in the life of the chain itself."

W. C. STILES, Warren, O.

"I am using your Waterproof Graphite Grease on wire rope exposed to the weather. It gives the best satisfaction of anything I ever used for this purpose. The rope does not rust since I have been using it, and it is therefore a great saving."

Dear Sirs: From WM. HOOPER, Supt. of Mines, Ticonderoga, N. Y.

I find that Dixon's Graphite Grease is the best material for coating wire rope that can be applied to it. I put a coating of the grease on the wire ropes at the mines once in ten days or two weeks. Any one is safe in warranting the rope to last twice as long as it would without the grease.

1st. The Graphite Grease prevents the wire in the rope from rusting.

2d. It prevents the rope from abrasion when brought in contact with hard substances.

3d. It prevents the wires forming the rope from abrasion one against the other, as the Graphite finds its way into and fills the minutest spaces, and is held there by the fatty substances in the mixture.

Put up in packages of 10, 25, 50 and 100 lbs., and in barrels of about 400 lbs. For prices see page 14.

DIXON'S GRAPHITED OIL.

It has not been found possible to permanently suspend graphite in oil, but in Dixon's Graphited Oil the attempt approaches very closely to complete success, as but little settling is apparent. It meets the requirements fully of those who require a reasonably heavy oil well charged with Dixon's pure flake graphite. Its uses are many.

680—¼ gal. tin can	**$0.25**
681—½ " " "	**.35**
682— 1 " " "	**.60**
683— 5 " " "	**2.85**
684—10 " " "	**5.50**
685—bbls. about 40 gals., 50 cents per gal.	

DIXON'S GRAPHITE CAR BOX GREASE

PREVENTS HOT BOXES.

It is an unequaled lubricant for boxes, engines, freight cars, passenger cars, ore cars, coal and coke cars, and specially valuable for cooling hot boxes. Prices on application.

DIXON'S GRAPHITE GREASE FOR GEARS.

This grease is of good body, and we recommend it for its great durability and smoothness. Its marvelous lubricating power is due to the Ticonderoga Graphite, which is the best solid lubricant known. A little of this grease does a great deal of work. Ask for the waterproof brand when wanted for gears coming in contact with moisture or water. Prepared in packages of 10, 25, 50 and 100 lbs., and in barrels of 300 to 400 lbs. For prices see page 14.

DIXON'S GRAPHITE CURVE GREASE.

This grease is made to meet the demand of trolley and horse car companies for a durable lubricant for curves and switches at a low price. Flake graphite is used, and the affinity for metal possessed by graphite makes it superior to any other form of lubricant. It is furnished in barrels of 400 to 500 pounds. Prices on application.

DIXON'S GRAPHITE GREASE FOR RAILWAY MECHANISM.

For perfectly lubricating switches, interlockings and other mechanism of railways in signal systems, the Dixon Company prepares special graphite greases according to requirements. No matter whether oils or greases are used, friction is better reduced when Dixon's pure flake graphite is added.

DIXON'S GRAPHITED WOOD GREASE.

This preparation is something entirely new, and something better than ever before offered railway companies for gears of electric railway cars. It does not cake in the gear cases, and it keeps the gears constantly and thoroughly lubricated, and at the same time prevents all drippings from the gear cases. Those who have tried it say it lasts longer and is more economical than any other lubricant. It is packed in barrels of about 300 pounds.

Barrels, about 300 lbs. . . . . 6 cents per lb.
Five Barrel lots . . . . . 5 " " "

DIXON'S
GRAPHITE PIPE JOINT COMPOUND.

FAR BETTER AND CHEAPER THAN RED LEAD.

Invaluable for the joints of radiators, for steam and hot-water apparatus, for gas pipes in streets or buildings, for bolts or screws, and for the various uses of gas-fitters, steam-fitters, plumbers and machinists.

The old-time practice of using red lead has been discontinued by all who have given Dixon's Pipe Joint Compound a fair trial. The graphite used is pure and carefully ground, and, being itself a natural lubricant, the pipe-fitter is enabled to make a much tighter and a much more perfect joint than with red lead. Dixon's Pipe Joint Compound being greater in bulk than an equal weight of red lead makes it far more economical to use.

Dixon's Graphite Pipe Joint Compound does not "set," and joints can remain months or years and then will yield to the ordinary pressure of the tongs, rendering unnecessary the breaking of joints, couplings and tools.

No bolts should be used in frame-work without being first protected by this graphite compound. Unprotected bolts have time and again been eaten and weakened by rust, and caused untold trouble and expense.

The president of the water and lighting department of Harrisburg, Pa., says:

"I have long ago forbidden the use of white or red lead, or anything but your graphite in this department. The result is that we have no more breaking of bolts or nuts on our street mains, valves, etc., or any trouble of that kind in or about our pumping plant. I think those plumbers or steam-fitters who persist in the use of white or red lead are doing so purely through ignorance, and nothing is so costly, not even carelessness."

The master mechanic of a prominent railroad says:

"I use Dixon's Graphite Pipe Joint Compound for pipe joints, steam-chest studs, cylinder studs, and also for retapping stay-bolt holes. I find that the tap works easier than with oil, and I am pleased with the material for the purposes named."

All who use it recommend it without hesitation.

No. 693—	1 lb.	package	. . . . .	20 cents	per lb.
" 694—	5 "	"	. . . . .	18 "	" "
" 695—	10 "	"	. . . . .	15 "	" "
" 696—	25 "	"	. . . . .	14 "	" "
" 697—	50 "	"	. . . . .	13½ "	" "
" 698—	100 "	"	. . . . .	13 "	" "

DIXON'S
Silica=Graphite Paint

HAS AN UNEQUALED RECORD OF OVER 25 YEARS.

Roofs well painted have not required repainting in fifteen to twenty years.

FORMULA:

Body: An ideal pigment untouched by heat, cold, dampness, salt air, rust, alkalies, or acids, and as pure, sweet and healthful as charcoal.

Oil: Old=fashioned, kettle=boiled linseed oil, guaranteed.

NOT ONLY DURABLE, BUT BEAUTIFUL.

Recommended as equally useful for Metal or Wood=work, Roofs, Bridges, Telegraph and Trolley Poles, Smoke=stacks, Boiler Fronts and Iron Construction Work of Buildings.

"THE PAINT THAT FOR THE LONGEST TIME WILL PUT OFF THE NECESSITY OF REPAINTING IS, IN THE NATURE OF THINGS, THE BEST AND MOST ECONOMICAL."

An Ideal Pigment. Dixon's Silica-Graphite is an ideal pigment. Both silica and graphite are impervious to the action of acids, alkalies, heat or cold. The silica is finely pulverized, and is probably the best filler known. It also gives strength and hardness to the graphite. The graphite is from Dixon's Ticonderoga mine, celebrated for its flake graphite. There is no graphite thoroughly suitable for painting purposes except flake graphite, as the flakes in such graphite form a fish-scale-like covering more durable and more flexible and more elastic than any other known pigment.

Graphite is one of the principal forms of carbon. It is as pure and sweet as charcoal. It is not affected by gases or chemicals, fire or water, heat or cold.

Graphite is very light. It has twice the bulk of mineral paints and three times the bulk of lead, and therefore will cover twice the surface of mineral paints and three times more surface than any of the lead paints.

Pure Boiled Linseed Oil. A well-known writer has said that, admitting all the faults of oxides, barytes, and leads in paints, a far worse evil is fictitious oil. There is no middle ground. Linseed oil is peculiarly adapted for a paint oil. It stands without a successful rival. Chemistry, potent as she is, cannot evolve a satisfactory substitute for it. They may deodorize fish oil, and still it will be a fish oil, hard to dry, and still more difficult to harden and keep from causing trouble. Mineral oil may be fixed up so its own mother won't know it, and still it will evaporate and leave nothing behind to bind the paint particles together that it carried freely enough to the surfaces.

Prices furnished on application. Special circulars and pamphlets with detailed information sent on request. Correspondence solicited.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J., U. S. A.

The question as to which is the better—boiled or raw linseed oil, may never be fully settled, but the weight of testimony seems to be on the side of boiled linseed oil, and this is the oil used by the Dixon Company. Its quality is guaranteed. It dries with reasonable rapidity and forms a tough, leathery skin, thoroughly binding the particles of graphite.

Spreading Power 600 Sq. Feet. A gallon ready mixed for the brush will cover about 600 square feet, one coat, on metal surfaces in good condition. The spreading power of graphite paint, like all other paints, depends largely on the condition of the surface, the temperature of the weather, and the skill of the hand applying it. Pound for pound it covers two to three times more surface than mineral or lead paints.

For New or Old Work. Dixon's Silica-Graphite Paint is equally suitable for new or old work—as a priming coat or as a finishing coat. It is suitable at all times and in all places where a paint of great durability is required and where a paint of a dark color can be used. It can be used over or under any other paint, and never fades.

Shades of Color. Graphite is a very strong coloring pigment, and for that reason no light shades can be made. The color card of the Dixon Company shows four standard shades only,—a dark olive green, natural or slate color, a dark red shade, and a jet black. When specially desired, other shades can be made by the introduction of strong pigments of the color wanted. Such paints, however, cannot possess all the merits of the standard colors.

Paint for Great Heat or Water. Smoke-stacks and boiler fronts subjected to very high heat, and bottoms of gas holders, and inner parts of water tanks subjected to the action of water, require a specially prepared paint, as linseed oil chars at about 500° F., and does not withstand water as well as a special mixture. For very high heat, and for surfaces exposed to the constant action of water, we therefore recommend Dixon's ready-mixed smoke-stack paint.

For all other painting we recommend, by all means, Dixon's Silica-Graphite Paint with linseed oil.

PACKAGES AND PRICES.

10 lbs. in Tin Pail, Thick, Ground in Oil, 15 cts. per lb.

25	"	"	"	"	"	"	"	14	"	"	"
50	"	"	Keg		"	"	"	13½	"	"	"
100	"	"	"		"	"	"	13	"	"	"
450	"	"	Barrel		"	"	"	12	"	"	"

5 gals. Keg, Thinned, Ready Mixed, $1.30 per gal.

10	"	"	"	"	"	1.25	"	"
25	"	"	"	"	"	1.20	"	"
50	"	"	"	"	"	1.15	"	"

DIXON'S GRAPHITE CYCLE PREPARATIONS.

The chain and sprockets of the bicycle are necessarily the greatest frictional and quickest wearing parts. They are the only bearings of a wheel exposed to dust and dampness. If not properly cared for, there is not only great friction, but great liability to breakage. Graphite properly prepared saves much discomfort and exposure. The Dixon Company prepares four kinds which fully meet the demands of all wheelmen.

No. 678 is a pure soft graphite reground with a choice lubricating oil of just sufficient quantity to make the graphite hold to the bearing parts of the chain and sprocket. It is packed in $\frac{1}{4}$ lb. screw-top cans, making a convenient and tight package, and is readily applied with a piece of cloth or with a brush. It is packed in $\frac{1}{2}$ gross and 1 gross boxes.

No. 679 is in the form of a compressed stick $3+\frac{7}{8}$ inches wrapped in tin foil, and fitted with a turned wooden box with close-fitting cap or lid. It is packed in $\frac{1}{2}$ gross or gross boxes.

No. 691 was made specially to meet the demand for a stick graphite more convenient for small tool-bags. The size is $3+\frac{1}{2}$ inches, as shown above. It is not fitted with box or holder, but is handsomely labeled and packed 3 dozen in a box.

No. 692—Dixon's Graphitoleo, while greatly esteemed as a cycle lubricant, has a wide range of uses. It is a preparation of very choice flake graphite and a pure petrolatum warranted not to gum or become rancid. For gun-locks, for the bearings of sewing and other small machines, for the screws of office-chairs and copying-presses, and for hundreds of other uses in homes and office, and in general, it is indispensable. Being in the convenient form of a collapsible tube, as shown above, it is always ready, and is neat and clean. It is packed one dozen on a card and three cards in a box. It lubricates perfectly and prevents rusting.

DIXON'S GRAPHITE FOR COMMUTATORS.

We prepare, under the trade number of 690, a stick graphite $3+\frac{7}{8}$ inches, wrapped in tin foil and fitted with wooden boxes, which is well-spoken of by dynamo engineers. Dixon's Graphitoleo (No. 692) is also used for dressing commutators, and is even preferred by some electrical engineers.

These preparations are generally sold only through dealers. Special circulars and pamphlets with detailed information sent on request. Correspondence solicited.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J., U. S. A.

ELECTROTYPING GRAPHITE.

Pure, soft graphite, most carefully prepared, is the only suitable graphite for electrotyping purposes.

Such is Dixon's Electrotyping Graphite—a choice product from the famous Ticonderoga mines owned entirely by the Dixon Company, and prepared especially for electrotyping purposes. It is known both at home and abroad for its purity, softness, fineness of pulverization, conductivity and economy.

We have made a special study of the requirements of the trade in this particular branch of our business, and have been aided in our efforts by the experience of the most practical electrotypers of the country, whose success, we have been assured, depends largely on the continued use of our Molding and Polishing Graphite.

By the use of our Molding Graphite the electrotyper is enabled to readily produce perfect molds of wood-engravings, and half-tone or process cuts, without the loss of the finest details.

The form also is relieved freely from the mold, and, when held to the light, presents a smooth and polished surface on the face and sides of the molding composition.

The molding composition being a non-conductor, it is absolutely necessary that the surface of the mold should be black-leaded with pure, soft graphite, free from grit and other foreign substances.

To insure success in this important branch of electrotyping, Dixon's No. 649, or Polishing Graphite, is necessary.

By its use a polished surface of an eminent conducting quality is imparted alike to the surface and sides of the mold, which insures a continuous and unbroken deposit of copper in the vat.

It is used by such well-known people as The De Vinne Press, Harper & Brothers, D. Appleton & Co., of New-York, and other leading publishers and electrotypers throughout the country.

DIXON'S No. 643 or XXXC for Molding.
DIXON'S No. 649 for Polishing and Conducting.

Each kind is put up in a neat and carefully labeled 5-lb. tin box, so that it can be kept separate and free from the dust and dirt incident to every shop.

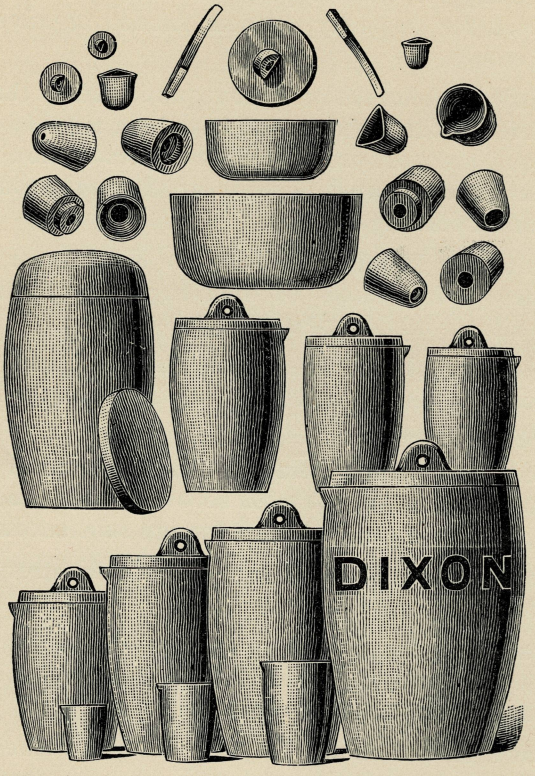
Price, 30 cents per pound.

BLACKLEAD CRUCIBLES

Were first made by Joseph Dixon, the founder of this Company, in 1827. Dixon's blacklead crucibles became at once the standard at home and abroad; and to-day they are still the standard.

Crucibles of all sizes and for all purposes. Bowls, Dippers, Stirrers, Stoppers, Nozzles, etc. Special work from sketch or pattern.

Best Materials Used Exclusively



Only Skilled Workmen Employed

Best material, skilled workmen, and experience.

We use the best materials exclusively; employ the most skilful workmen; and, guided by the experience of 69 years, are producing the best crucibles in the world at the lowest price, quality considered. Poor crucibles—those that flake, or crack, or drop the metal in the ashes, thus losing not only both crucible and contents, but coal, time, labor, etc.—are dear at any price.

Special circulars and pamphlets with detailed information sent on request. Correspondence solicited.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J., U. S. A.

SIZES OF DIXON'S CRUCIBLES.

Nos.	Height Outside.	Diameter at the Top Outside.	Diameter at the Bilge Outside.	Diameter at the Bottom Outside.	PRICES.	Holding Capacity.
	INCHES.	INCHES.	INCHES.	INCHES.		
1	3 1/4	2 5/8	2 5/8	1 5/8	15 cts. each.	
2	4	2 7/8	2 7/8	1 7/8	18 " "	
3	4 1/2	3 1/2	3 1/2	2 1/4	21 " "	
4	5	4	4	2 3/8	24 " "	
5	5 1/2	4 1/8	4 1/8	2 3/4	27 " "	
6	5 3/4	4 1/2	4 1/2	2 3/4	30 " "	Three
7	6 1/4	5	5	3 1/4	33 " "	
8	6 3/4	5 1/4	5 1/4	3 1/4	35 " "	
9	7 1/2	5 3/8	5 3/8	3 3/8	38 " "	Pounds
10	7 5/8	6	6 1/2	4	40 " "	
12	8	6 1/4	6 3/4	5	45 " "	
14	8 1/4	6 3/4	7 1/4	5		of
16	8 3/4	7 1/8	7 5/8	5 1/2		
18	9 3/4	7 1/2	8 1/4	5 5/8		
20	10 1/8	7 3/4	8 5/8	6		Molten
25	10 1/2	8 1/4	9	6 1/4		
30	11 1/4	8 5/8	9 1/2	6 5/8		
35	11 5/8	9 1/4	9 3/4	7	No. 14	Metal
40	12 1/4	9 1/2	10 1/2	7 3/4		
45	13	10	10 3/4	7 1/2	and upwards	
50	13 1/4	10 1/4	11 1/4	7 3/4		per
60	14	10 1/2	11 1/2	8	3 1/2 cents	
70	14 1/2	10 3/4	12	8 1/2		
80	15 1/4	11 1/8	12 3/8	8 5/8	per No.	Number.
90	15 7/8	11 1/2	12 1/2	9		
100	16 1/4	11 3/4	13	9 1/4		
125	16 3/4	12 1/4	13 3/4	9 1/2		
150	18 1/4	13	14 3/4	10 3/8		
200	20	14 1/4	16	10 3/4		
300	21	15 1/4	17	11 1/2		

CRUCIBLES FOR FILE TEMPERING.

60	17 1/4	9	9 1/4	8	
70	20 1/2	9	9 1/4	8	
80	22 1/4	9	9 1/4	8	

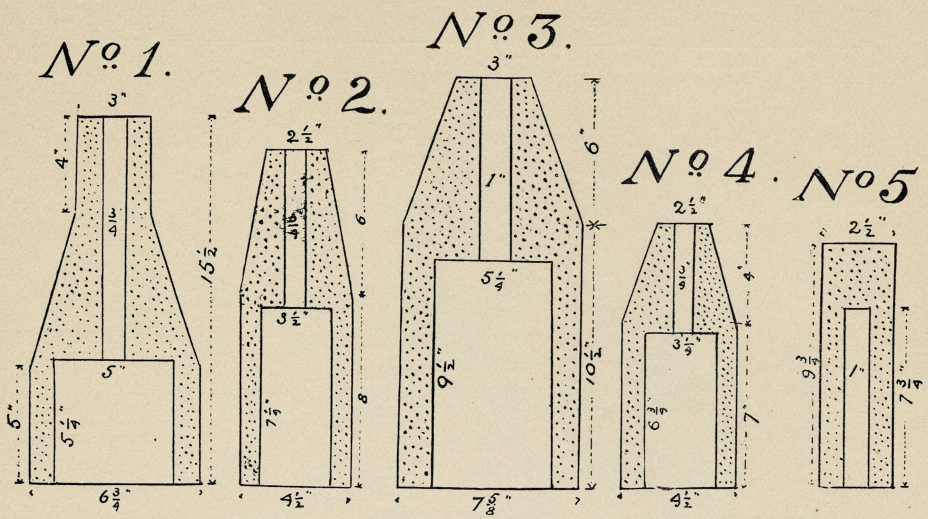
PRICES OF COVERS.

No. 1 . . . . . 10 cents each.	No. 8 . . . . . 15 cents each.
" 2 . . . . . 10 " "	" 9 . . . . . 15 " "
" 3 . . . . . 10 " "	" 10 . . . . . 15 " "
" 4 . . . . . 10 " "	" 12 . . . . . 18 " "
" 5 . . . . . 10 " "	" 14 . . . . . 18 " "
" 6 . . . . . 15 " "	" 16 . . . . . 18 " "
" 7 . . . . . 15 " "	" 18 and upward, 1 cent per No.

Besides the above sizes of Crucibles and Covers, we carry an assortment of Coloring Bowls, Spelter Basins, Stirrers, etc.

Dixon's Phosphorus Chargers

OR PHOSPHORIZERS.



A phosphorus charger, or phosphorizer, is a device made of plumbago crucible material, which is used for the introduction of phosphorus into the molten metal in the manufacture of phosphor-bronze. The sectional illustrations above show five standard shapes made by the Dixon Company. An iron holding rod is securely fastened in the hole running to the top. The phosphorus, securely wrapped, to prevent spontaneous ignition, is placed in the lower chamber, and the phosphorizer is then plunged into the molten metal. The charging of the phosphorizer with the phosphorus is an operation which requires some degree of care and skill.

The sudden change of temperature which the phosphorizer undergoes in being plunged into the molten bronze can only be withstood by plumbago crucible material; a clay phosphorizer is practically useless, being almost certain to fly into pieces as soon as immersed.

The demand for phosphor-bronze in the manufacture of piston rings, valve covers, machine castings, pinions, cog wheels, propeller screws, hydraulic press and pump barrels, piston rods, screw bolts for steam cylinders, hardware, etc., has greatly increased, and the Dixon phosphorizers will be found indispensable by casters for the introduction of the proper amount of phosphorus and the attaining of the best results.

Dixon's Refractory Bricks

WILL LAST LONGER AND MAKE BETTER FURNACE LINING THAN ANY OTHER FIRE BRICKS MADE.

These bricks are only made to order; we do not keep them in stock as sizes vary greatly.

Prices furnished on application. Special circulars and pamphlets with detailed information sent on request. Correspondence solicited.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J., U. S. A.

DIXON'S
Founders' Perfect Core Wash

MAKES SOUND, SMOOTH AND PERFECT CASTINGS.

It makes a hard skin or veneer on the mold, which will not rub off nor run before the hot metal.

Intended for heavy as well as light work. Specially useful for steel castings.

Is a preparation of plumbago which will guarantee smooth dry sand and loam castings at small expense. It has been in the market more or less since 1870. Before this the old-time charcoal and clay mixture was universally used. Sharp competition, in driving foundrymen to produce smoother castings, made necessary a better wash than clay and charcoal. The necessary experimenting was undertaken, and in 1871 John K. Burke, then the leading founder of Rochester, New-York, wrote us: "You have made a perfect success. It is the very thing so long desired. Whosoever wishes to make perfect dry sand and loam castings will hereafter use no other wash on cores or molds." His brother, P. Burke, wrote: "No wash known to the craft will compare with it for producing smooth castings." This is the general opinion still. No new-fangled directions are necessary. It is simply mixed with water, and the smaller cores can be dipped and the larger ones coated with a brush. For heavy work two or three coats should be applied; when ordinary work only is desired, the wash can be applied after the mold is dried, or baked, and without much smoothing; but for very smooth castings apply the wash before the mold is dried, or baked, and smooth it well with the proper tool. The Perfect Core Wash is superior to anything else for dry sand and loam work or for steel castings — especially in the heavier work. It will make a hard skin or veneer on the mold, which will not rub off or run before the hot metal. Consequently the castings come out sound, smooth and perfect. If you want the interior of your hollow castings smooth and clean, you should use a plumbago core wash. Plumbago facing will not serve in such work, as the hollow places can seldom be reached with the shake bag or slicker. Therefore, to do this work a wash should be used, and it must be refractory enough to stand the highest heat of casting, sticky enough to be easily applied, porous enough to vent the gases, and carry good plumbago enough to give a first-class, smooth, bright finish. Dixon's Perfect Core Wash does all this and does it perfectly.

Boxes of 25, 50, and 100 lbs. . . . . 10 cents per lb.
Barrels of 300 lbs. . . . . 8 " " "

DIXON'S

Plumbago Facings, called

India Silver Lead.

Competition and a demand for fine work are driving foundrymen to produce smoother castings. Tons of India Silver Lead are now used for facings, where in old times a 25-lb box was grudgingly bought.

It is called India Silver because it is mined in India, on the Island of Ceylon, and because it yields a polish of a silvery tone.

How to Order India Silver Lead.

One kind works with dry sand and is used as a wash. Another works with green sand and through a shake-bag. Still another with green sand, and is put on by the brush. Some facings require, for perfect lines, a little dusting of powdered charcoal. Some brands will "slick" —others not. So if the foundry superintendent will specify the kind of work he uses the facing on, his order can be more perfectly filled.

Qualities of Dixon's India Silver Lead.

It will admit of being "slicked" in the finishing of the mold, and will neither burn nor run before the molten metal at the time of pouring; it will adhere firmly to the surface of the mold and part well, or "peel," from the casting, giving it a uniform, bright color.

Leading Kinds and Prices.

We prepare among others for the different kinds of work the following leading grades. Each kind is powdered so finely that every grain will go through the shake-bag.

Trade No.	Description.	Use.	Price per lb. in barrel lots.
660	Plumbago Facing	Common Work	3½ c.
659	German Bohemian Lead	Flat Molding	4 "
604	Ex Ex Plumbago Facing	Stove Plate, Print'g & Copying Press,	6 "
618	India Silver Lead	Light Casting	6 "
619	India Silver Lead	Ordinary Job Work	6 "
621	X X Plumbago	Heavy Casting and Steel Casting	10 "
605	Founders' Core Wash	Cores, Loam, and Dry Sand Work	8 "

No. 2441 Made of Ticonderoga Graphite.

Better than Ceylon; better than Silver Lead; behaves well under the slicker; will not wash before the metal; adheres well to the sand; burns slowly so the gases are nicely relieved. No. 2441 means progress in facings.

Price, in barrel lots, 6 cents per lb.

A Word about "Ex Ex" (Trade-Mark) No. 604.

We have made the "Ex Ex" brand of facings for 18 years, and it is considered by many to be absolutely without an equal. The well-known press manufacturers, R. Hoe & Co. and T. Shriver & Co., New-York, have been steady and large users of it for 15 years. Steinway & Sons, New-York, have also been users of "Ex Ex" facing for about the same length of time. The Niles Tool Works, Hamilton, Ohio, have used it for 8 years, and buy it in 20-barrel lots. The Philadelphia and Reading R. R. buy 10 barrels at a time, and have used it for the past 8 years. The Dickson Manufacturing Company, Scranton, Pa., have been steady users of it for 8 years. Davenport & Tracey Co., Stamford, Conn., Bridgeport Brass Co., Bridgeport, Conn., and the Knowles Steam Pump Works, Warren, Mass., have all used it from 6 to 8 years. The "Ex Ex" can be used both as a wash on dry sand work, or on green sand work, by dusting on a little powdered charcoal.

If the "Ex Ex" is desired on green sand wash as "one bag facing," specify so in your order and we will make it so by putting in the charcoal here.

DIXON'S

Crucible Clay and Graphite Mixture.

In Brass Foundries.

Useful to patch up worn-out furnace-linings. When making new lining, use it in place of fire-clay; you will find it a much better stuff. It stands the worst heat and wear and tear, will save your furnace-linings, and postpone the day of buying new expensive fire-brick; also postpone the time for repairs.

In Iron Foundries.

Useful for lining up ladles, and very useful for mixing with ordinary clay as a tap-hole mixture.

For Coal-Gas Works.

Useful as a cement on covers of retorts, and also as a more refractory clay around the retort itself.

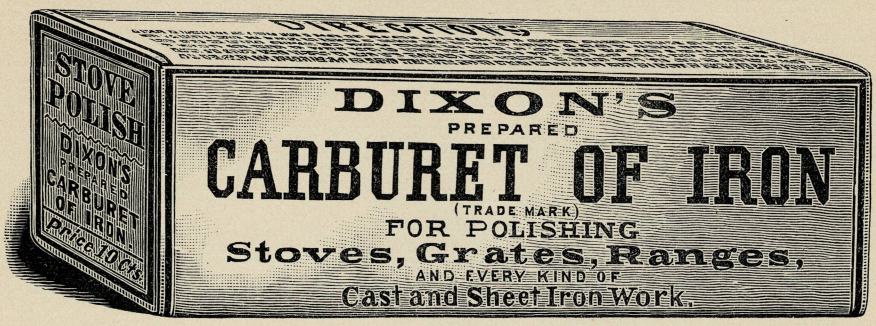
The Crucible Clay being sticky, makes it strong; the Graphite stands the heat. Together they stand well both heat and wear and tear.

Packed in barrels of about 300 lbs.

Prices furnished on application. Special circulars and pamphlets with detailed information sent on request. Correspondence solicited.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J., U. S. A.

DIXON'S CARBURET OF IRON STOVE POLISH.



Double the former size.

Dixon's "Carburet of Iron" Stove Polish was established in 1827 and is to-day, as it was then, the neatest and brightest in the market; a pure plumbago, giving off no poisonous vapors. The size is now doubled and cake weighs nearly half a pound, but the quality and price remain the same.

Free from Unpleasant Smells.

Housekeepers are greatly annoyed by the unpleasant smell that finds its way through the house whenever their stoves are newly polished, which is caused by the burning of impurities, contained in all kinds of Lustre, Common Black Lead, Liquid Polish, etc., of which stove polish has heretofore been made. Dixon's Stove Polish IS MADE FROM PURE CARBURET OF IRON, and has no more smell when burnt than a piece of cast iron.

Unlike Every Other Kind, it is Neat and Clean to Use.

If properly used, and not too much applied to the stove, there will be *no dust* from it, and every particle will adhere to the iron; and you can use it without soiling the floor or carpet, which cannot be done with any other kind. TRY IT!

It Prevents Rust.

It is so prepared that it does not burn red under a hot fire, like other kinds, and it preserves the iron from rust. A stove will last much longer if covered with Dixon's Carburet of Iron Stove Polish. Sheet-iron stoves and pipe will last several years longer by using our Polish, as it protects and *preserves* the iron from corrosion.

Dixon's Carburet of Iron Stove Polish is sold through dealers.

The Best is Always Cheapest to Buy.

This any housekeeper can prove for herself, as we will *warrant* one package of it to polish as much surface as *three* of any other, and the polish will last longer on the stove.

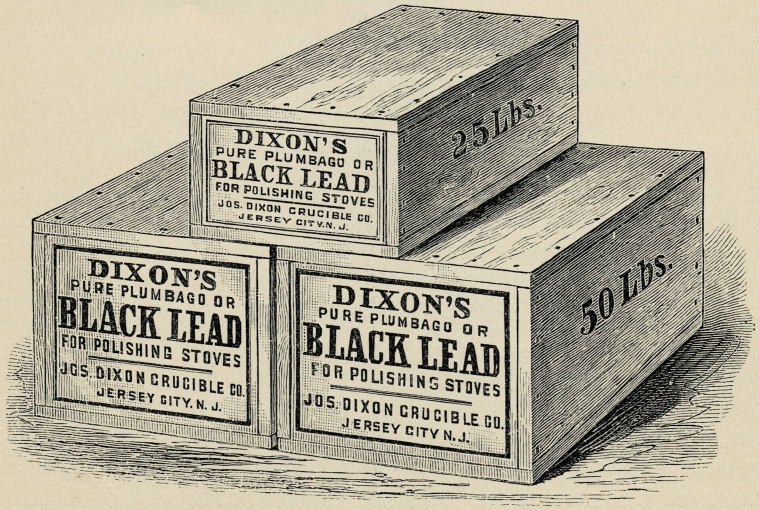
It Requires Far Less Time and Labor.

Much hard labor is often bestowed before a polish is produced on a stove, and the reason is this: the materials that compose ordinary stove polish possess *in themselves* very little polishing property, and it is only by dint of *much rubbing* that *any polish at all* can be produced by them. Any hard substance can be polished by *rubbing* it long enough. Marble, steel, plate glass, and all metal goods are polished by simply *rubbing* them, while the powder employed in all these cases is not itself a polish. You can polish your stove by taking the soot that gathers on the inside, applying it wet, and *rubbing it long enough.* From the foregoing, it is clear that the polish on your stove is not produced by the *stove polish* you use, but by the *hard labor and time you spend over it.*

Dixon's Stove Polish,

On the contrary, is *in itself* ALL POLISH. It requires *no hard labor* to *produce a brilliant polish,* if the stove is free from grease or any kind of varnish. Try it!

DIXON'S
Carburet of Iron Stove Polish
IN BULK.



For stove manufacturers and stove dealers, we are furnishing the genuine Dixon's Stove Polish by the pound. In packages of 25, 50, 100, or 250 lbs.

Dixon's Carburet of Iron Stove Polish is sold through dealers.

POWER
of the Belt
is lost by
SLIPPING.

LIFE
of the Belt
is lost by
NEGLECT.

DIXON'S
TRACTION
BELT DRESSING
AND
Leather Preservative.

WARRANTED TO GIVE SATISFACTION.

It absolutely prevents a belt from slipping. Thoroughly preserves the leather, and protects the elasticity of the belt.

An expert, in an article in the *Mechanical News*, lately said:

"The common and every-day users of belts know but little about them other than what they learn by observation. They know how to put one on the pulleys when it slips off; know how to re-lace it when the lacing gives out, or how to cut out a piece and take it up when it becomes too slack, or how to put rosin on it when it slips. The latter lesson is learned too quick, probably because it ought not be learned at all. It is simply an injurious stimulant which tends to destroy the vital energies and shorten the life of the belt, especially a leather belt."

Other expert writers have pointed out the danger of using castor oil. Castor oil is much used, but never with perfect satisfaction, as it has an active acid principle, and is drying in its nature. The immediate action of castor oil is to stretch the belt and make it unnecessarily loose, and its continued use destroys the elasticity and makes the belt lifeless and rotten.

Special circulars and pamphlets with detailed information sent on request.
Correspondence solicited.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J., U. S. A.

Dixon's Belt Dressing and Leather Preservative is not a new and untried article. It has been in the markets of Europe and this country for over twenty years, and we *know* it will do all we claim for it.

It is the custom of many owners and superintendents to use nothing on their belts, but, when the belts slip, to tighten them up. This, however, heats and wears the journals, consumes the lubricating oil, and does not remedy the trouble of slipping. Weight, we know, increases journal friction, and the tightening of a belt acts just the same as would the adding of dead weight to the journals. The tighter the belt is made, the surer it is not to slip, but it is impossible to tell how much additional work it and the power plant have to do when made too tight.

There is a certain amount of elasticity in all good leather belting, but time and continued hard work weaken it, and the application of soap, rosin, tar, tallow, and castor oil is simply an injurious and temporary stimulant which tends to destroy the vital energies and shorten the natural life of the belting. Dixon's Belt Dressing and Leather Preservative saves the life and elasticity of the belt to a most wonderful degree, and, as it completely prevents slipping of the belt, no power is wasted and the greatest economy secured. Slipping belts mean loss of power, and loss of power of course means additional cost.

We however base our guarantee of the value of Dixon's Belt Dressing on the unimpeachable evidence of those who have used it according to our directions or their own good common sense. In no case, where so used, has it failed to give satisfaction.

We send it out in 10, 25, 50 and 100 pound packages and barrels of about 375 pounds.

Specimen Testimonial.

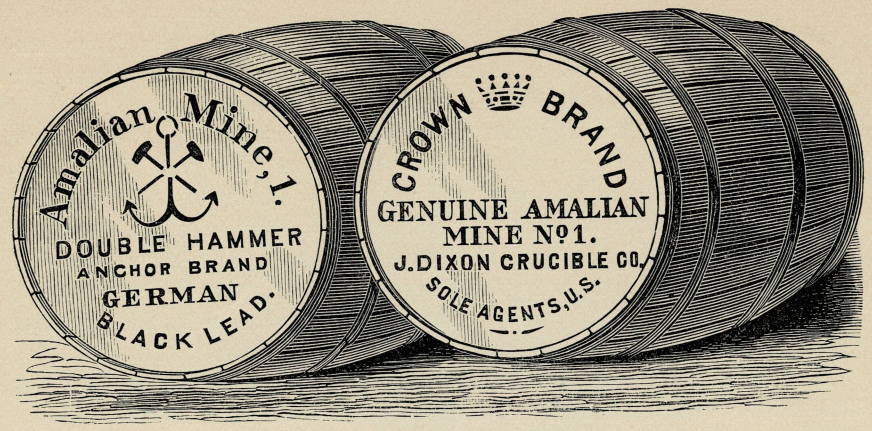
We have used Dixon's Belt Dressing and Leather Preservative for the past eight years, and in every case it has given perfect satisfaction, keeping the belts in such shape that they work fully up to their capacity. Our main belt (18 inches in width) is now running its eighth year, and has never been taken up. We have tried several other dressings, but always found yours superior.

CHARLES VAN BENTHUYSEN & SONS, Printers,
ALBANY, N. Y.

TRADE NUMBERS AND PRICES:

No. 665 . . .	10 lb. pail . . .	30 cts. per lb.
" 666 . . .	25 " " . . .	25 " " "
" 667 . . .	50 " " . . .	22 " " "
" 668 . . .	100 " keg . . .	20 " " "
" 669 . . .	Bbls., about 375 lbs.,	18 " " "

Special circulars and pamphlets with detailed information sent on request.
Correspondence solicited.
JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J., U. S. A.



DIXON'S

AMALIAN MINE, No. 1, DOUBLE HAMMER, ANCHOR BRAND,

GERMAN BLACKLEAD.

In the original casks of 1000 lbs. each; or, repacked in barrels of 300 lbs., kegs of 100 lbs., boxes of 50 or 25 lbs. We also have same articles powdered, and packed in 25, 50, 100 and 300 lb. packages.

This is a cheap article of blacklead, used chiefly by molders as a facing.

Amalian Mine No. 1 is its trade-mark, and this brand guarantees good stock.

Dixon's Blacklead for Bottoms of Yachts.

Specially prepared for the purpose, and unequaled for purity and uniformity of grain.

Each year yachtsmen and small-boat owners are becoming better acquainted with the value of blacklead, called by some pot lead, for the bottoms of their boats. It largely lessens friction, enabling the boat to go through the water much easier, and, therefore, much faster, with same power.

"Blackleading" is of value in proportion to the quality of the article used. Dixon's Blacklead is a pure graphite ground to a fine and even grain, so that there is no waste; and a vessel's bottom treated with it will be of surprising smoothness. It will also be found a protection to the bottom.

DIXON'S SPECIAL GRAPHITE

For Piano Actions, Organ Slides, etc.

We have prepared this grade with special reference to the dry lubricating of wood surfaces. It is so absolutely free from grit, and is so smooth and perfect, that no piano or organ manufacturer will use any other after a trial. **Price, 30 cents per pound.**

Prices for Blacklead furnished on application. Special circulars and pamphlets with detailed information sent on request. Correspondence solicited.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J., U. S. A.

Dixon's American Graphite Pencils

The manufacture of Lead Pencils is one of the chief departments of the graphite industry, for the "Lead" in all pencils is graphite and not lead, as is commonly supposed. Although we only began the manufacture of Dixon's "American Graphite" Pencils in 1872, we have now every reason for believing that we are to-day the leading pencil-makers.

We manufacture over five hundred styles, including those suitable for artists, schools, architects, draughtsmen, and counting-rooms.

Dixon's "American Graphite" Pencils are made in eleven degrees of hardness of leads to successfully meet the requirements of all classes of work as well as to suit individual tastes.

Dixon's "American Graphite" Pencils are unequaled for smooth and tough leads, and will outwear all ordinary pencils several times over.

To those dealing in lead pencils we shall be glad to send our pencil catalogue, which fully describes our entire line of lead pencils, and pencil sundries, and shows illustrations of all our leading styles.

We do not sell direct to consumers unless the local dealers do not keep them.

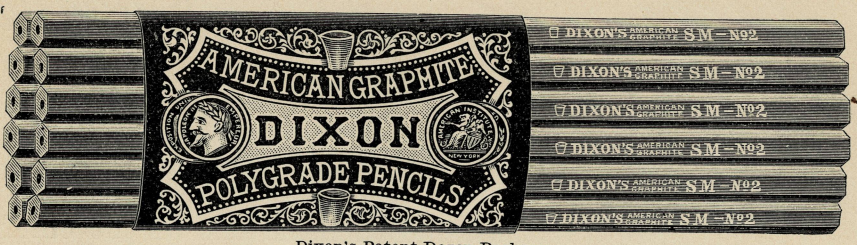
JOSEPH DIXON CRUCIBLE CO.,

JERSEY CITY, N. J., U. S. A.

Prices furnished on application. Special circulars and pamphlets with detailed information sent on request. Correspondence solicited.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J., U. S. A.

STANDARD STYLES OF DIXON'S AMERICAN GRAPHITE PENCILS.



Dixon's Patent Dozen Package.

DIXON'S FINE OFFICE PENCILS.

Stamped in gold, "DIXON'S AMERICAN GRAPHITE S M" &c.

In eight grades of hardness of leads, viz.:

S—Soft	(Old Style,	No. 1)
S B—Soft Black	("	No. 1½)
S M—Soft Medium	("	No. 2)
M B—Medium Black	("	No. 2½)
M—Medium	("	No. 3)
M H—Medium Hard	("	No. 3½)
H—Hard	("	No. 4)
V H—Very Hard	("	No. 5)

Round Shape, finished in the natural color of the cedar wood.

Grade Stamps	S	S M	M B	M	M H	H	V H
Trade Numbers	141	142	142½	143	143½	144	145

Round Shape, "Satin Finish," originated by us.

Grade Stamps	S	S B	S M	M B	M	M H	H	V H
Trade Numbers	151	151½	152	152½	153	153½	154	155

Round Shape, fine Maroon finish.

Grade Stamps	S M	M
Trade Numbers	111	112

Round Shape, glossy Black finish.

Grade Stamps	S M	M
Trade Numbers	106	107

Hexagon Shape, finished in the natural color of the cedar wood.

Grade Stamps	S	S M	M B	M	M H	H	V H
Trade Numbers	122	123	123½	124	124½	125	126

Hexagon Shape, "Satin Finish."

Grade Stamps	S	S B	S M	M B	M	M H	H	V H
Trade Numbers	166	166½	167	167½	168	168½	169	170

Hexagon Shape, fine Maroon finish.

Grade Stamps	S M	M
Trade Numbers	116	117

The above four styles of finish of Round Gilt, and three of Hexagon Gilt, comprise the assortment of **Dixon's American Graphite** Pencils, of the very finest style and quality, known to the trade as "fine goods." They are put up in Dixon's patent dozen package (see above cut), and are packed in ½ gross boxes.

Prices furnished on application. Special circulars and pamphlets with detailed information sent on request. Correspondence solicited.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J., U. S. A.

DIXON'S AMERICAN GRAPHITE PENCILS.

With Nickel Clamp Tip Point Protectors and Rubbers.

In round and hexagon shape and in all the choice finishes and grades of hardness of Dixon's fine goods.

With Patent Inserted Rubber Tablets.

These pencils are in Dixon's fine goods, and are in round and hexagon shape, cedar and satin finished and S M, M and H grades.

DIXON'S AMERICAN GRAPHITE "MONARCH" PENCILS.

Handsomely finished in maroon in four grades of lead, viz.: S M, MB, M, MH.

A tablet size, hexagon pencil, beautifully finished in maroon, with gilt stamp and nickel tip with rubber.

"DIXON'S AMERICAN GRAPHITE STENOGRAPHER."

Cut shows full diameter, but reduced length.

A handsome cedar-finished pencil made in round shape only.

THE SIZE IS JUST RIGHT TO PREVENT TIRING OF THE HAND.

No. 489 . . Round Shape, cedar-finished, **S** grade, specially manufactured for stenographers, who prefer a softer grade than the standard **S M.**

No. 490 . . A round-shaped, cedar-finished, **S M** grade full-length pencil of medium diameter, stamped in gold as above. The leads for these pencils have been selected by expert and professional shorthand writers, and are peculiarly adapted for phonographic writing.

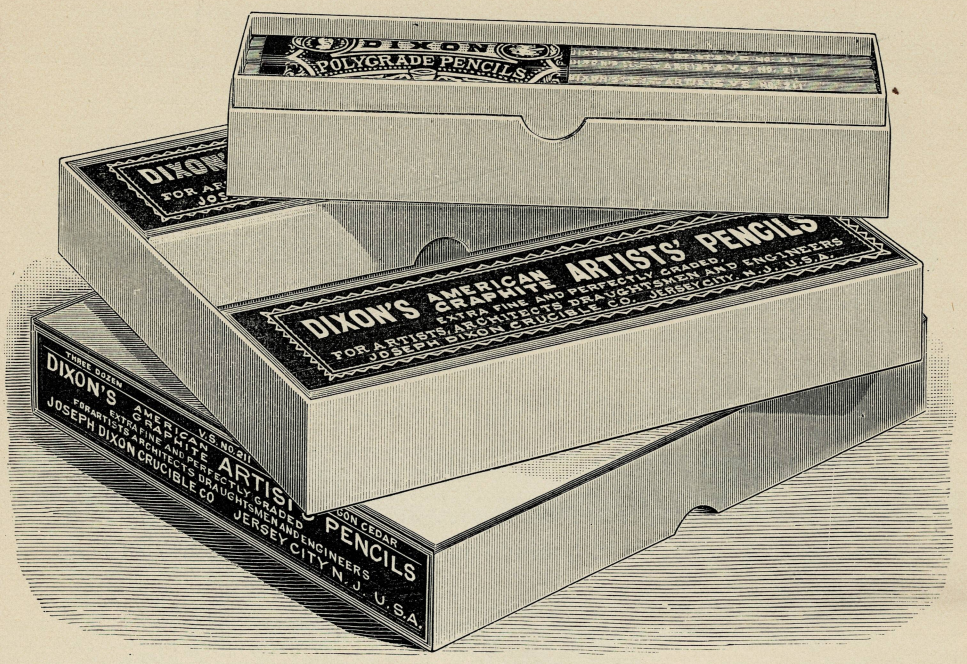
No. 491 . . Same as 490, except that it is **M** grade.

Prices furnished on application. Special circulars and pamphlets with detailed information sent on request. Correspondence solicited.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J., U. S. A.

DIXON'S AMERICAN GRAPHITE ARTISTS' PENCILS.

Packed in handsome white watered paper, gilt-trimmed boxes, with black and gold labels. One dozen in a box, three dozen in a carton. See cut below.


DIXON
POLYCRADE PENCILS
DIXON'S AMERICAN GRAPHITE ARTISTS' PENCILS
FOR ARTISTS, ARCHITECTS AND DRAUGHTSMEN AND ENGINEERS
JOSEPH DIXON CRUCIBLE CO.
JERSEY CITY, N.J., U.S.A.
DIXON'S AMERICAN GRAPHITE ARTISTS' PENCILS
JOSEPH DIXON CRUCIBLE CO
JERSEY CITY, N.J. U.S.A.

Stamped in gold, "DIXON'S AMERICAN GRAPHITE ARTISTS',"

AND "ARTISTS' PERFECTED GRAPHITE."

They are made in hexagon shape only, beautifully finished in the natural color of the cedar wood, and are in eleven grades of leads, as follows, viz.:

Trade Nos.	Dixon's Grade Stamps	Similar grade to the European stamp of
210	VVS—Very, very soft	(B B B B B)
211	VS—Very soft	(B B)
212	S—Soft	(B)
213	SM—Soft medium	(H B)
214	MB—Medium black	(F)
215	M—Medium	(H)
216	MH—Medium hard	(H H)
217	H—Hard	(H H H)
218	VH—Very hard	(H H H H)
219	VVH—Very, very hard	(H H H H H H)
219½	VVVH—Very, very, very hard	(H H H H H H H)

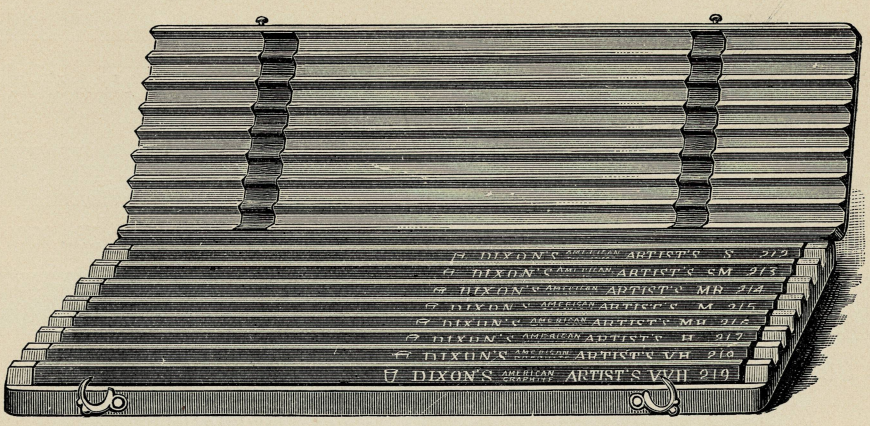
These leads are extra fine and perfectly graded. The hard grades are perfect for architects, draughtsmen and engineers, and the softer and medium grades are unequaled for art work. They are endorsed by members of the National Academy of Design, New York; designers, drawing teachers, mechanical engineers, and artists generally.

Prices furnished on application. Special circulars and pamphlets with detailed information sent on request. Correspondence solicited.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J., U. S. A.

CASES OF DRAWING PENCILS.

DIXON'S AMERICAN GRAPHITE ARTISTS' PENCILS, ASSORTED GRADES OF LEADS, COMPLETE FOR ART WORK. SUITABLE FOR PRESENTS.


DIXON'S AMERICAN ARTIST'S S 212
DIXON'S AMERICAN ARTIST'S SM 213
DIXON'S AMERICAN ARTIST'S MB 214
DIXON'S AMERICAN ARTIST'S M 215
DIXON'S AMERICAN ARTIST'S MH 216
DIXON'S AMERICAN ARTIST'S H 217
DIXON'S AMERICAN ARTIST'S VH 218
DIXON'S AMERICAN ARTIST'S VVH 219

This Cut represents Artists' Case, No. 207.

In Real Aromatic Cedar Cases, Highly Polished.

Trade Nos.

205 . . Case of 4 Dixon's American Graphite Artists' Pencils, 1 each,

Grade Stamps	SM	MB	MH	H
Trade Numbers	213	214	216	217

206 . . Case of 6 Dixon's American Graphite Artists' Pencils, 1 each,

Grade Stamps	S	SM	MB	M	MH	H
Trade Numbers	212	213	214	215	216	217

207 . . Case of 8 Dixon's American Graphite Artists' Pencils, 1 each,

Grade Stamps	S	SM	MB	M	MH	H	VH	VVH
Trade Numbers	212	213	214	215	216	217	218	219

In Fine Red Paper Sliding Cases.

202 . . Case of 4 Dixon's American Graphite Artists' Pencils, 1 each,

Grade Stamps	SM	MB	MH	H
Trade Numbers	213	214	216	217

203 . . Case of 6 Dixon's American Graphite Artists' Pencils, 1 each,

Grade Stamps	S	SM	MB	M	MH	H
Trade Numbers	212	213	214	215	216	217

204 . . Case of 8 Dixon's American Graphite Artists' Pencils, 1 each,

Grade Stamps	S	SM	MB	M	MH	H	VH	VVH
Trade Numbers	212	213	214	215	216	217	218	219

Pencils in Fine Paper Sliding Cases.

200 . . Case of 4 Dixon's American Graphite, Round, 1 each,

Grade Stamps	S	SM	M	H
Trade Numbers	212	213	215	217

201 . . Case of 4 Dixon's American Graphite, Hexagon, 1 each.

Grade Stamps	S	SM	M	H
Trade Numbers	212	213	215	217

Prices furnished on application. Special circulars and pamphlets with detailed information sent on request. Correspondence solicited.

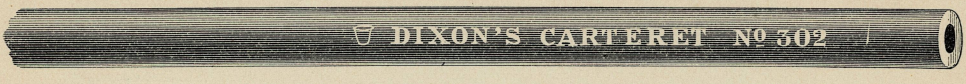
JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J., U. S. A.

DIXON'S PENCILS FOR SPECIAL PURPOSES.

With Large Diameter Leads.

Trade Nos.

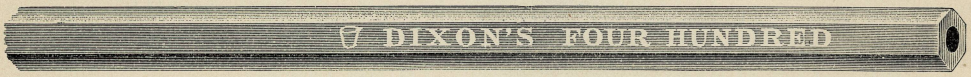
300 . . Dixon's "Operator" Satin Finish, gold stamp, rich black lead.
301 . . Dixon's " Ultimatum," Satin Finish, gold stamp.



302 . . Dixon's Carteret, Cedar Finish, gold stamp, harder than No. 300.

303 . . Dixon's Car Inspector Pencil, Satin Finish, gold stamp.
Dixon's Car Inspector Pencil fully meets the various requirements of the committee appointed by the Master Car Builders' Association. The pencil makes a clear, black mark, which cannot easily be erased, is not hardened or spoiled by age. The leads are tough and strong, readily sharpened but not easily broken. The marks do not smudge or run, and will never fade by exposure to light. There is no pencil made which is its equal for the work intended.

304 . . Dixon's **304** Pencil, Satin Finish, gold stamp, harder than No. 302.



400 . . Fine Cedar Finish, deep rich black lead.

DIXON'S AMERICAN GRAPHITE SKETCHING CRAYON.

Trade No.

341 . . We believe this crayon to be superior to anything in the market for like purposes. Its lead is tough and has a deep, rich, black color.

DIXON'S AMERICAN GRAPHITE No. 342 CRAYON.

Trade No.

342 . . For Editorial, Press Room, and all Newspaper work, Railroad, Express, and Telegraph offices, and wherever a soft, deep, rich, black color is desired.

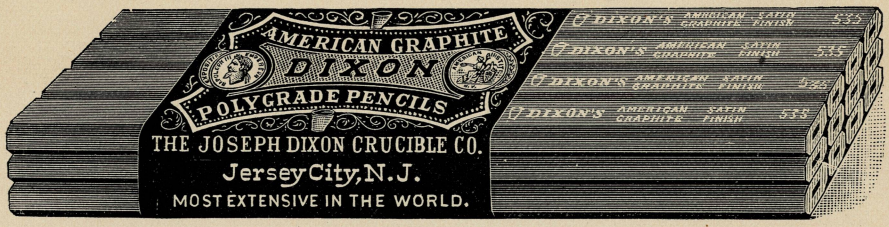
The above two crayons are made in round shape only, in the finest Cedar finish, and stamped in gold.

Prices furnished on application. Special circulars and pamphlets with detailed information sent on request. Correspondence solicited.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J., U. S. A.

DIXON'S CARPENTERS' PENCILS.

All Kinds are Packed in ½ Gross Boxes.



All carpenters' and wood-workers' outfits should include a supply of these pencils; and if they are particular, and see that they get DIXON'S AMERICAN GRAPHITE, they will never be annoyed by a poor pencil breaking at an unexpected moment.

We make them in 7 in., 9 in., and 12 in. lengths, oval shape, and also with beveled corners, as shown in the cut above. Our fine grades are finished in cedar, satin, or maroon, stamped in gold "DIXON'S AMERICAN GRAPHITE"

We also make, in same lengths, carpenters' pencils of intermediate and cheaper quality, stamped "DIXON'S," that, for the price, are not equaled by any other maker.

ASSORTMENT BOX No. 429.

2 doz.	Carpenters'	No. **410**	7 inch	oval, cedar.
1	" "	No. **514**	7 "	white wood, 6-in. rule.
1	" "	No. **517**	7 "	oval, mottled.
1	" "	No. **535**	7 "	beveled edge, satin.
1	" "	No. **232**	7 "	oval, stained red.

Prices furnished on application. Special circulars and pamphlets with detailed information sent on request. Correspondence solicited.

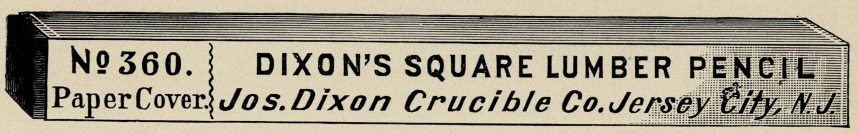
JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J., U. S. A.

DIXON'S COLORED LEAD CARPENTERS'.

White Wood, Oval Shape, Ink Stamp.

Trade Numbers	390	391	392	393	394	395
Length	7 in.	9 in.	12 in.	7 in.	9 in.	12 in.
Color	Blue	Blue	Blue	Red	Red	Red

DIXON'S LUMBER PENCILS.

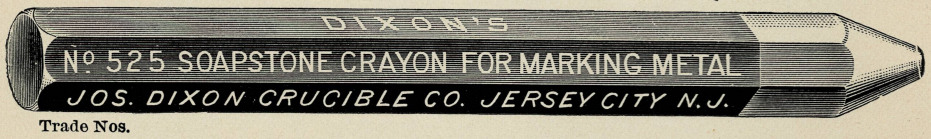


Dixon's Lumber Pencil, 4¾ in. long, ½ in. square, solid black lead, with paper wrapper pasted on, ½ gross in a box, two grades — regular and hard.

Dixon's Lumber Pencil, 4¾ in. long, ½ in. in diameter, hexagon shape, japanned finish, ½ gross in a box, three grades — hard, regular and soft.

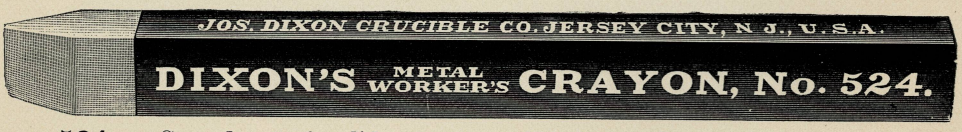
365	Soft black lead, size and shape of 361, but paper covered.						
496	Yellow	"	"	"	"	"	"
497	Terra Cotta	"	"	"	"	"	"
520	Red	"	"	"	"	"	"
521	Blue	"	"	"	"	"	"
522	Green	"	"	"	"	"	"

DIXON'S METAL WORKERS' CRAYONS.



Trade Nos.

525 . . Sawed out of solid soapstone, and nothing equals it for marking on all dark-colored metals. Packed in ½ gross boxes.



524 . . Sawed out of solid soapstone, flat shape, chisel point. Packed in ½ gross boxes.

844½ . . Packed 3000 in case.

Prices furnished on application. Special circulars and pamphlets with detailed information sent on request. Correspondence solicited.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J., U. S. A.

DIXON'S SOLID CRAYONS.

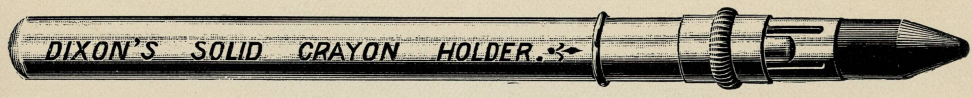
Cut shows full Diameter, but reduced Length.

Not covered with wood, but solid round shape leads 5-16 inch in diameter, 7 inches long, paper covered. 1 dozen in neat box, and 6 boxes in carton.

786 . . "DIXON'S BEST BLUE."
382 . . "DIXON'S BEST GREEN."
384 . . "DIXON'S BEST BLACK."
380 . . "DIXON'S BEST TERRA COTTA."
385 . . "DIXON'S BEST YELLOW."
386 . . "DIXON'S BEST RED."
387 . . "DIXON'S BEST BROWN."

These solid crayons are also manufactured in hexagon shape in all the above colors.

For railroad or editorial offices, these solid crayons are unequaled for quality and convenience.



A handsomely finished nickeled holder for Dixon's Solid Round Crayons. The ring clamp holds the crayon firmly and enables the user to utilize every inch of the crayon. Manufactured in 4½ and 6½-inch lengths and sold with or without crayons as desired.

Packed one dozen in box, 6 boxes in carton.

DIXON'S CLOTH AND MARKING PENCILS.

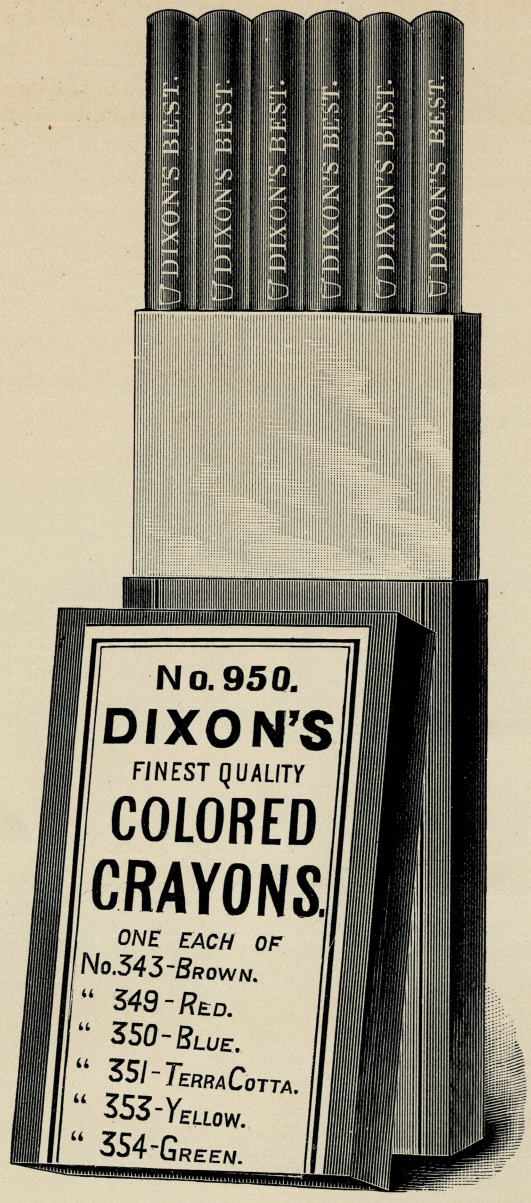
Leads and Wood of Large Diameter and Round Shape.

Finished in maroon, polished and plain cedar, white wood, and polished blue, with leads of large size, in black, blue, red and green.

475 . . Polished cedar, Cloth, black lead.
782 . . " " " blue "
783 . . " " " red "
788 . . " " " blue "
785 . . Maroon, "MECHANIC'S," black lead.
815 . . Polished red, extra size, red lead.
818 . . " blue, extra size, blue lead.
784 . . White Wood Marking, blue lead.
787 . . " " " " "
805 . . " " " red "
806 . . " " " green "
789 . . " " Leather and Cloth, black lead.
804 . . " " with special large and soft black lead.
807 . . " " " " " " " blue "
808 . . " " " " " " " red "

Prices furnished on application. Special circulars and pamphlets with detailed information sent on request. Correspondence solicited.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J., U. S. A.



The uses of colored crayons have multiplied tenfold in ten years; they are now used not only in every drawing class, but also for checking way bills, invoices, marking newspapers, etc. The color should be vivid; they should mark smoothly and easily, be tough, and wear long with each sharpening. Those stamped "DIXON'S BEST" are made by perfected machinery, are carefully selected, and have a vividness and toughness unapproached by any other make.

They are made only BROWN, RED, BLUE, YELLOW, TERRA COTTA and GREEN.

Cheaper ones of same color are made at a less price.

Prices furnished on application. Special circulars and pamphlets with detailed information sent on request. Correspondence solicited.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J., U. S. A.

COLORED CRAYON PENCILS.

Packed in ½ Gross Boxes, in Dixon's Patent Dozen Package.

Hexagon Shape, Gold Stamp, "Dixon's Best," Highly Finished.

Mammoth Size, ¼ gross boxes.

Trade Nos.		Trade Nos.	
338	9 inch, red and blue lead.	**348**	7 inch, red lead only.
347	7 " " " " "	**327**	7 " blue " "
352	8 " " " " "		

Round Shape, Gold Stamp, "Dixon's Best," Highly Finished.

343	7 inch, brown lead.	**353**	7 inch, yellow lead.
349	7 " red "	**354**	7 " green "
350	7 " blue "	**335**	7 " sepia "
351	7 " terra cotta "		

Round Shape, Blind Stamp, Plain Finish.

339	7 inch, red and blue lead	**346**	7 inch, yellow lead.
340	7 " black lead	**355**	7 " blue "
344	7 " brown "	**356**	7 " red "
345	7 " green "		

816 . . . . . 7 inch, polished cedar, dead stamp, green lead.
817 . . . . . 7 " " " " " red "
819 . . . . . 7 " " " " " blue "

RED AND BLUE "TRILATERAL" PENCILS.

Mammoth Size.

Cut shows full Diameter, but reduced Length.

Packed in ¼ Gross Boxes, with Dixon's Patent Dozen Package.

Gold Stamp, "Dixon's Best," Highly Finished.

Trade No.		Trade No.	
331	7 inch, red lead.	**332**	7 inch, blue lead.

DIXON'S TAILORS' CRAYONS.

For marking on all goods of Light Color.

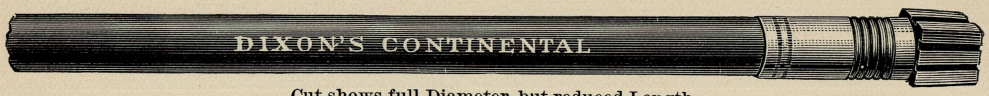
Trade Nos.	
900	Black, square, beveled edged, black and gold label.
901	Red " " red " " "
902	Blue " " blue " " "

1 dozen in box, and 6 boxes in carton.

Prices furnished on application. Special circulars and pamphlets with detailed information sent on request. Correspondence solicited.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J., U. S. A.

DIXON'S "CONTINENTAL" PENCILS.



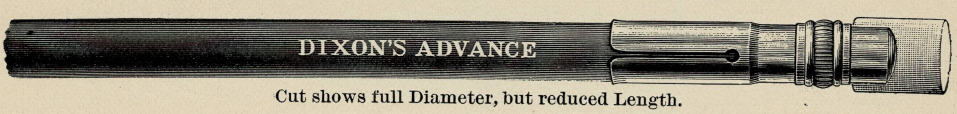
Cut shows full Diameter, but reduced Length.

Packed in ½ Gross Boxes, with Dixon's Patent Dozen Package.

Dixon's "Continental" is a full length, regular diameter, high grade pencil, with gold stamp and nickel tip, with specially designed and patented fluted rubber, as shown in illustration above. The fluting in the rubber adds largely to its efficiency as an eraser and paper cleaner.

Finished in black, satin, cedar and maroon. Made in round shape only.

DIXON'S "ADVANCE" PENCILS.



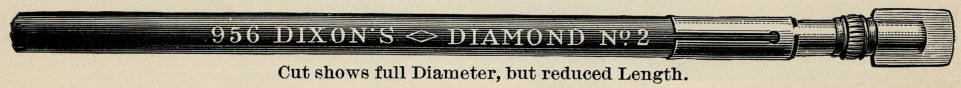
Cut shows full Diameter, but reduced Length.

Packed in ½ Gross Boxes, with Dixon's Patent Dozen Package.

Dixon's "Advance" is a full length, regular diameter, high grade pencil, with gold stamp. The nickel tip with rubber is of peculiar construction, and a decided novelty; it can be opened and a new rubber put in without trouble.

Finished in black, satin, cedar and maroon. Made in round shape only.

DIXON'S "DIAMOND" PENCILS.



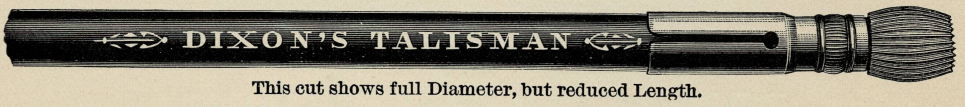
Cut shows full Diameter, but reduced Length.

Packed in ½ Gross Boxes, with Dixon's Patent Dozen Package.

Dixon's "Advance" pencil became at once so exceedingly popular that we were led to improve its form and produce it in tablet diameter.

Finished in black, satin, cedar and maroon. Made in round shape only.

DIXON'S "TALISMAN" PENCILS.



This cut shows full Diameter, but reduced Length.

Packed in ½ Gross Boxes, with Dixon's Patent Dozen Package.

Dixon's "Talisman" is a full length, regular diameter, high grade pencil, stamped in gold, and made in round and hexagon shapes. The nickel attachment is a point protector with corrugated rubber tip, and is unlike anything heretofore produced. We recommend it as a specially popular and quick-selling pencil.

Finished in black, satin, cedar and maroon. Made in round and hexagon shapes.

Prices furnished on application. Special circulars and pamphlets with detailed information sent on request. Correspondence solicited.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J., U. S. A.

DIXON'S "CABINET" PENCILS.

Cut shows full Diameter, but reduced Length.

Packed ½ Gross in Box, with Dixon's Patent Dozen Package.

These Pencils are made in Round shape and Hexagon shape, stamped in Gold, with No. 2 and No. 3 leads of high grade. They are fitted with Nickel Tips having a screw-thread and carrying an Erasive Rubber of superior quality. They are finished in Black, Satin, Cedar and Maroon.

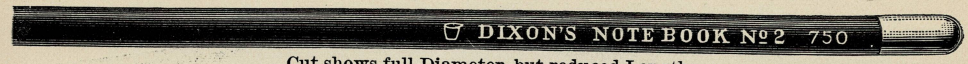
DIXON'S "SECRETARY" PENCILS.

Cut shows full Diameter, but reduced Length.

Packed in ½ Gross Boxes, with Dixon's Patent Dozen Package.

Tablet size, Gilt stamp, Round shape and Hexagon shape, with screw-thread Nickel Tip and Rubber attachment. Finished in Black, Satin, Cedar and Maroon.

DIXON'S "NOTE-BOOK" PENCILS.

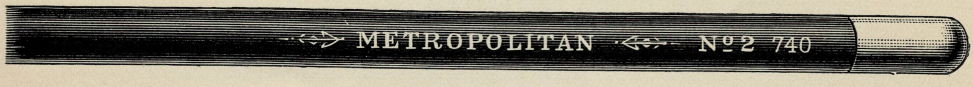


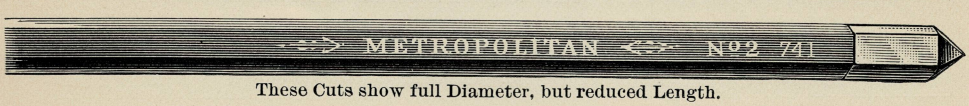
Cut shows full Diameter, but reduced Length.

Packed in ½ Gross Boxes, with Dixon's Patent Dozen Package.

Tablet size, Gilt stamp, Round shape and Hexagon shape, with Nickel Tip attachment. Finished in Black, Satin, Cedar and Maroon.

DIXON'S "METROPOLITAN" PENCILS.



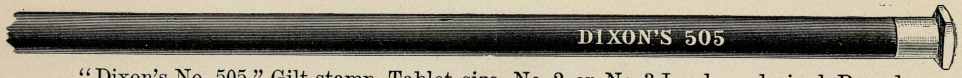


These Cuts show full Diameter, but reduced Length.

Packed in ½ Gross Boxes.

In Round shape and Hexagon shape, Gold stamp, No. 2 and No. 3 Leads of superior quality. These Pencils are fitted with neat Nickel Caps and are finished in Black, Satin, Cedar and Maroon.

DIXON'S SPECIAL TIPPED PENCILS.



"Dixon's No. 505," Gilt stamp, Tablet size, No. 2 or No. 3 Lead, as desired, Round shape, Cedar finish, with square top Bone Tip; in ½ gross boxes.

"Dixon's No. 506," similar to "Dixon's No. 505," but with Nickel Tips.

Tablet size, for Memorandum and Pocket Books, with Flange Nickel Tips, finished in Maroon, Cedar, or Satin, with gold stamp, and in length up to 7 inches, as desired.

Prices furnished on application. Special circulars and pamphlets with detailed information sent on request. Correspondence solicited.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J., U. S. A.

DIXON'S "MASCOT" PENCILS.

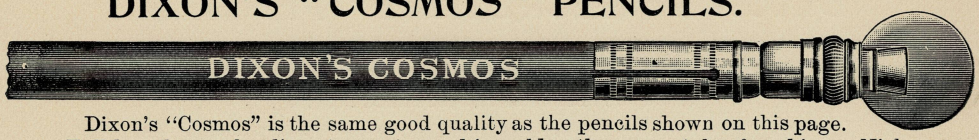
Cut shows full Diameter, but reduced Length.

Packed in ½ Gross Boxes, with Dixon's Patent Dozen Package.

Dixon's "Mascot" is a full length, but TABLET SIZE, high-grade pencil, stamped in gold, and made in round and hexagon shapes.

The Nickel Point Protector is similar to that on the popular "Talisman."

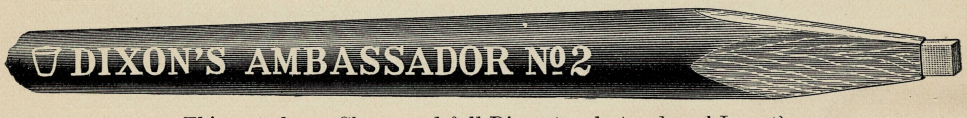
DIXON'S "COSMOS" PENCILS.



Dixon's "Cosmos" is the same good quality as the pencils shown on this page. Full length, regular diameter — stamped in gold — the same style of packing. Nickel point protector holds a flat disc of choice erasive rubber. Round shape.

DIXON'S TAPER SHAPED PENCILS.

Packed One Dozen in a Box — Six Boxes in a Carton.



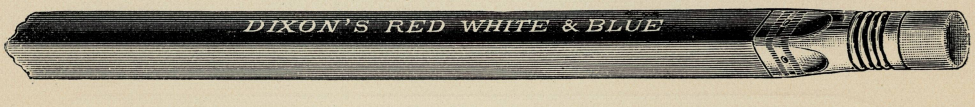
This cut shows Shape and full Diameter, but reduced Length.

DIXON'S "AMBASSADOR" is a full length, high grade pencil, tapering in shape, stamped in silver, and beautifully finished in black, maroon, satin, and cedar. The rubber plug is of the best quality. The pencil is a quick seller.

TAPER SHAPE, TABLET SIZE.

TAPER SHAPE, WITH LARGE ERASIVE TABLET.

DIXON'S "RED, WHITE AND BLUE" PENCILS.



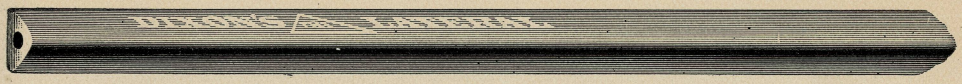
These pencils are the popular trilateral shape, with leads of the same quality. Each pencil is beautifully finished in red, white and blue, and stamped in gold — and furnished with or without nickel tips and rubbers, as desired.

Packed in ½ gross boxes, with Dixon's patent dozen package.

Prices furnished on application. Special circulars and pamphlets with detailed information sent on request. Correspondence solicited.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J., U. S. A.

DIXON'S "TRILATERAL" PENCILS.



Cut shows full diameter, but reduced Length.

Packed in ½ Gross Boxes, with Dixon's Patent Dozen Package.

DIXON'S "TRILATERAL" is a full length, high grade pencil, stamped in gold. Its triangular shape makes it exceedingly popular, as it fits the fingers, does not tire the hand from continuous use, nor roll when laid on a slanting desk.

Same as above, but with Nickel Tips and Rubbers.

DIXON'S PENCILS.

Beautifully Finished in Aluminum.

Triangular, Round and Hexagon Shape with and without Nickel Tips and Rubbers.

Packed in ½ Gross Boxes, with Dixon's Patent Dozen Package.

Dixon's Pencils. Beautifully Finished in Gold.

Same grades and shapes as the aluminum finish.

DIXON'S "HIGH SCHOOL" PENCILS.

Patent Dozen Package; ½ Gross Boxes.

Round Shape, "Satin Finish," Regular Diameter.

Grade Stamps,	S	SM	MB	M	MH	H	VH
Trade Nos.	980	981	982	983	984	985	986

Round Shape, "Satin Finish," Tablet Size.

Grade Stamps,	S	SM	MB	M	MH	H	VH
Trade Nos.	987	988	989	990	991	992	993

Dixon's "High School" pencils, being of fine quality and carefully graded, have been adopted by many of the leading School Boards. The two sizes make them peculiarly suited for schools.

DIXON'S "PROGRAMME" PENCILS.

Round shape, finished in red, white and blue, with gilt tips and rings.
Hexagon " " " cedar and maroon, " " " " "

The round shape will be finished to order in gold, silver or other colors.

Prices furnished on application. Special circulars and pamphlets with detailed information sent on request. Correspondence solicited.

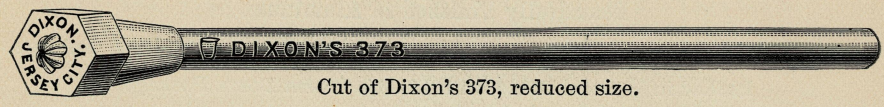
JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J., U. S. A.

CHEAP PENCILS.

Experience has taught us that the first-class and higher-priced pencils are always cheaper in the end, and we always recommend the higher-priced pencils for that reason; still, we know that for common uses cheap pencils are demanded, and we make 30 styles with which to meet that demand. They run from a plain, unfinished cedar to a well-finished gilt-stamped pencil. A few are illustrated on this page.

Finished in Cedar, Black and Red. Inserted Rubber Tablets.

Finished in Cedar, Black and Red. Inserted Rubber Plug.



Cut of Dixon's 373, reduced size.

Finished in Black, Red and Cedar. Hexagon Rubber Head.

MEDIUM PRICED PENCILS.

Without Caps or Tips, Stamped in Gold, and Packed in ½ Gross Boxes.

"**RAVEN,**" No. 2 and No. 3 leads; round shape only, raven finish.

"**METROPOLITAN,**" No. 2 and No. 3 leads; round and hexagon shape, maroon, cedar and satin finish.

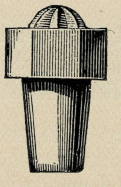
"**CENTURY,**" No. 2 and No. 3 leads; round and hexagon shape, cedar finish only.

"**RUBY,**" No. 2 leads; hexagon shape, ruby finish.

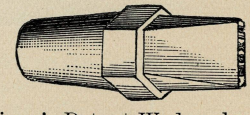
"**GARNET,**" No. 2 and No. 3 leads; round and hexagon shape, garnet finish.

RUBBER HEADS AND TIPS FOR PENCILS.

Top view of No. 379.



No. 379. Hexagon Head.

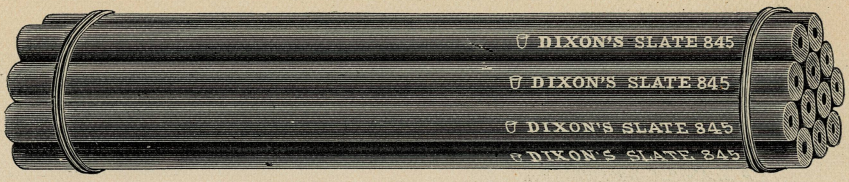


Dixon's Patent Wedge-shape Rubber Head, No. 451.

Prices furnished on application. Special circulars and pamphlets with detailed information sent on request. Correspondence solicited.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J., U. S. A.

SLATE PENCILS IN WOOD.



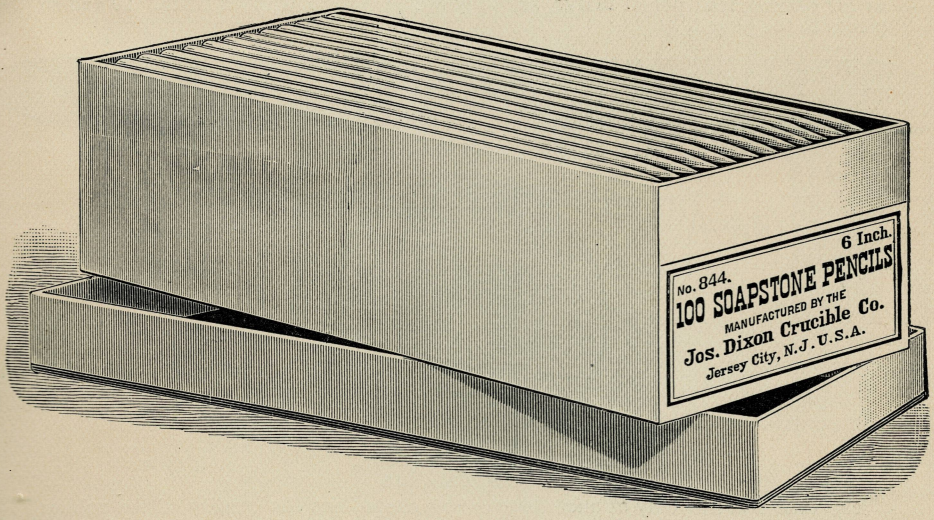
Dixon's Slate Pencils in wood are in round, hexagon and oval shape. The "lead" is round shape and unsurpassed for marking quality. They are made in regular and tablet size, and finished in cedar, black, red, green, yellow, pink, light blue and dark blue polish.

ASSORTMENT BOX. SLATE PENCILS IN WOOD.

No. 836 . . One Dozen each Slate Pencils. Wood finished in Green, Yellow, Pink, Light Blue, Red, and Dark Blue.

No. 835 . . Two dozen each as above.

SOAPSTONE SLATE PENCILS.



Dixon's Soapstone Pencils are the real soft-grained soapstone, free from grit. While the slate pencil in wood may be considered neater and nicer, no slate pencil ever delighted school boy or girl quite as much as the old-fashioned soapstone pencil, that can be sharpened in the most artistic style on the first convenient stone or brick.

Dixon's Soapstone Pencils are made in lengths running from 7 inches to 4 inches, and are guaranteed the best in the market.

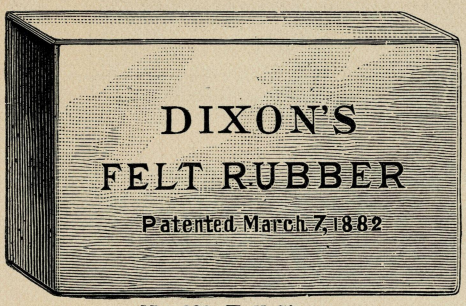
Prices furnished on application. Special circulars and pamphlets with detailed information sent on request. Correspondence solicited.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J., U. S. A.

DIXON'S FELT ERASIVE RUBBERS.

Superlatively Fine Quality.

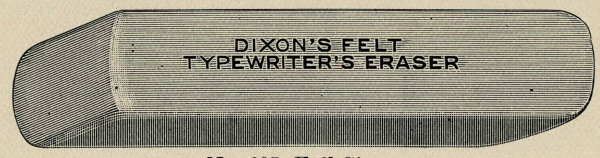
Packed in 1 lb. boxes. 8 to 80 pieces to the pound.



No. 880, Full Size.

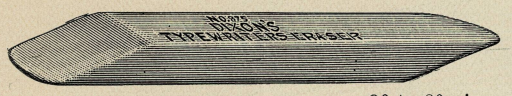
No. 889, Full Size.

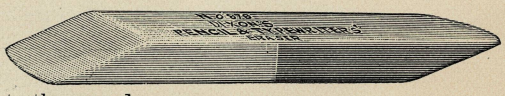
No. 1102, Full Size.



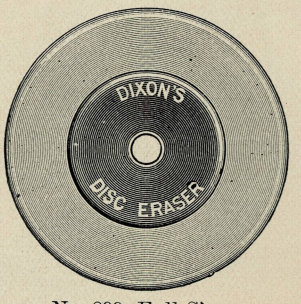
No. 895, Full Size.

The quality of these erasers is superior to anything heretofore offered the public for erasing typewriter ink. Those who have used them for typewriter marks, as well as for erasing lead pencil marks, say they would not be without them. 20 and 40 pieces to the pound.





30 to 80 pieces to the pound.



No. 899, Full Size.

The eraser is not only of most convenient shape, but the quality of the rubber recommends it to all who use pen, pencil, or typewriter, it being compounded to meet all requirements. Packed one dozen on a card—six cards in a box.

Oval shape, fine polished cedar. 1 doz. in a box, 6 boxes in carton.

The erasive ends for ink and pencil marks are of the very best quality.

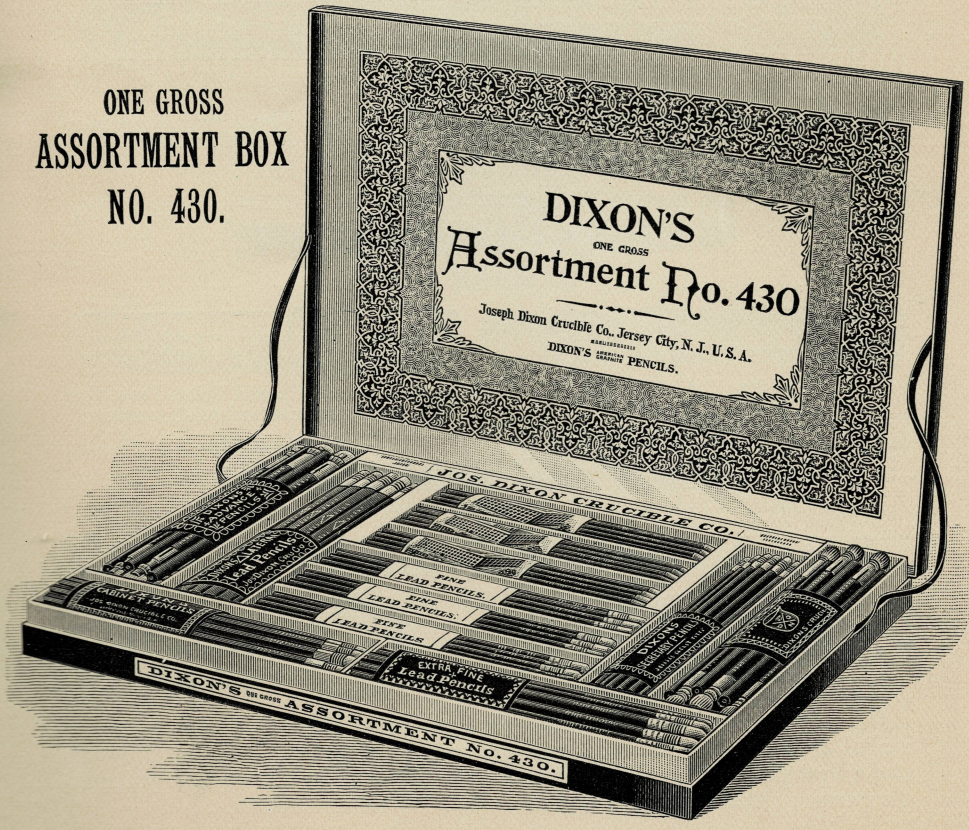
Prices furnished on application. Special circulars and pamphlets with detailed information sent on request. Correspondence solicited.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J., U. S. A.

DIXON'S ASSORTMENT BOXES.

Quite a demand has arisen of late for neat, attractive and salable assortment boxes. To meet this demand we offer the following boxes, which contain carefully made selections of our popular styles and grades. They are in handsome boxes that will prove a credit and an attraction to any counter or showcase. See page 41 for Dixon's Assortment No. 429 Carpenters' Pencils.

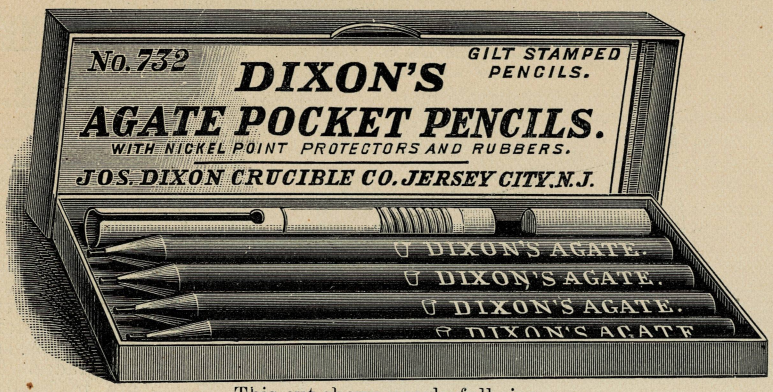
ONE GROSS ASSORTMENT BOX NO. 430.



Prices furnished on application. Special circulars and pamphlets with detailed information sent on request. Correspondence solicited.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J., U. S. A.

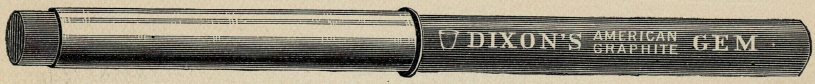
DIXON'S POCKET PENCILS.



This cut shows nearly full size.

732 . . Box containing four "DIXON'S AGATE" Pencils (tablet size, fine quality, gilt stamp), with point protector and extra rubbers.

Full Size Cut of Dixon's No. 427



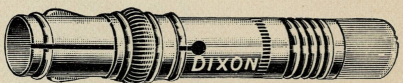
Full Size Cut of Dixon's No. 298.

DIXON'S PATENT PENCIL POINT PROTECTORS.

One Doz. in a Box. Six Boxes in a Carton.

Full Size Cut of No. 366.

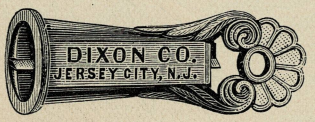
Full Size Cut of No. 363.

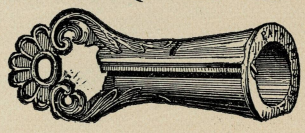


Dixon's Clamp Tip and Point Protector No. 367, with inserted rubber eraser.

Full Size Cut of No. 368.

DIXON'S PENCIL SHARPENER.





Dixon's Patent Long Bevel Pencil Sharpener No. 460, the only really useful article yet produced for a sharpener. Our new ones have patent stops that prevent breaking of the lead. Every sharpener warranted to give entire satisfaction; 1 doz. in box, 12 boxes in carton.

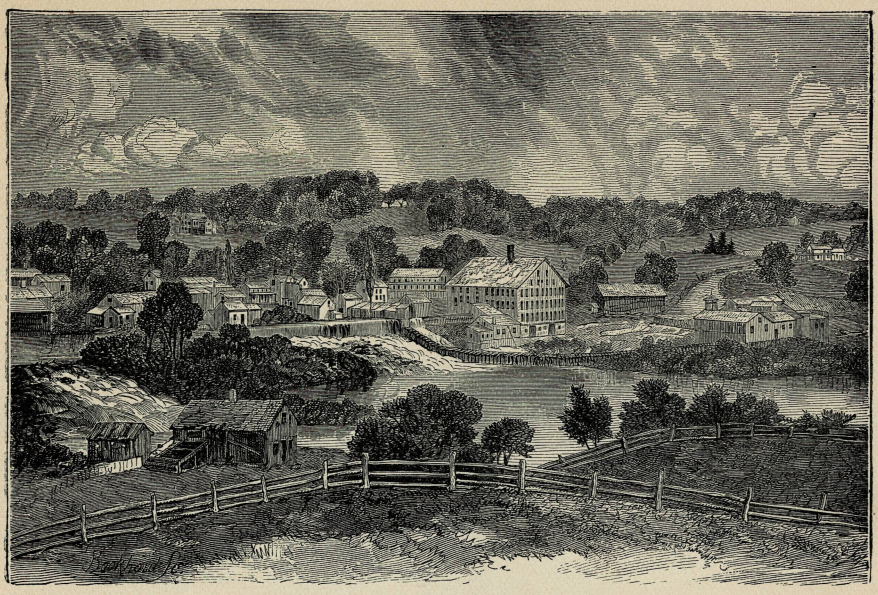
Prices furnished on application. Special circulars and pamphlets with detailed information sent on request. Correspondence solicited.

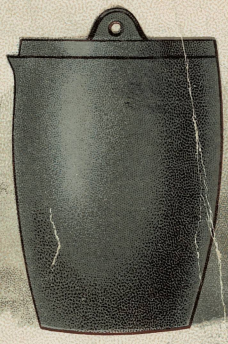
JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J., U. S. A.

Rafting cedar logs to the Dixon Mill at Crystal River, Fla.

Cedar is the universal wood used for pencils at the present time. The best source of supply is Florida; but so many pencils are made and the demand is so great that the Florida supply is rapidly becoming exhausted, and the day is not far distant when the pencil manufacturers of the world will be compelled to look elsewhere or to use some other material. Some pencil manufacturers are already using cedar from other sections of the United States, but with little satisfaction to themselves or customers, as the wood is tough and hard and too apt to be cross-grained.

The Dixon Company make use only of the soft, straight-grained Florida cedar, and by careful foresight have secured sources of ample supplies of Florida cedar for many years to come.



Graphite Mines, Ticonderoga, N. Y.

The Dixon Company own the only successful Graphite mines in America, situated at Ticonderoga, N. Y. They also own a vast water-power at the outlet of Lake George into Lake Champlain, where they have a mill six stories high and ninety feet square for the perfecting of their Graphite: a view is given above. This gives the Company an advantage over any other establishment in the world in the Graphite trade, and it enables the Company to produce highly perfected grades of Graphite suitable for every branch of the mechanical arts of a quality never before known and at reduced prices.